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THIS WEEK'S NEWS

NEW DESIGNS for Ministry of Housing and Local Government housing, implementing Circular 38/51, *and on view at the Building Exhibition, are shown on* *p.* 653

MR. DAVID ECCLES, Minister of Works, opened the Building Exhibition on Wednesday. *p.* 658

THE NEW PRINCIPAL of the A.A. School of Architecture is Mr. Michael Pattrick, A.R.I.B.A. *p.* 659

MR. MACMILLAN'S speech on Tuesday night on housing is reported. The target of 300,000 *houses is reaffirmed and the industry has been consulted on the temporary stoppage of other work necessary to step up house building.* *p.* 692

BUILDING BULLETIN NO. 2A

THE doctrine of school design is being steadily consolidated. Recent Building Bulletins show a new authority in their painstaking analysis of organisation and concentration on principles rather than the elaboration of detailed solutions; the latest to appear, No. 2A, though in the form of a supplement to No. 2 (which dealt with the secondary modern school), gives so much information about Secondary Schools generally, that it may be regarded as an independent treatise. While much of it is of primary concern to the administrator, it should be read by all school architects for background information as well as for the many practical suggestions it makes, while understanding of its methods of controlling areas and costs is essential to all who deal with schools.

Building Bulletin No. 2A is not an easy book to read; the different types of secondary school, each with its own requirements and its own variations in size and kind, result in a complex network of cross references, recommendations, facts, and figures. Part of the difficulty arises from the wholly praiseworthy determination of the Ministry to permit, even to encourage, the greatest variety in educational methods, and at the same time to preserve that basis of uniformity without which administration becomes impossible. To achieve this delicate balance the areas of teaching space are defined as totals only, which may be broken down in almost any way at the Local Education Authority's discretion (subject only to a minimum classroom size of 480 f.s.); by ingenious calculations the basic area and cost limits of 75 f.s. and £240 per place are adjusted to control almost every type of Secondary School, with every bewildering variety of size and curriculum. How much easier it would be to impose a few standard programmes, each with its own cost limit, and how much more economical in administrative time and money! Fortunately, however, we have not yet descended to the educational methods of the beehive or ant-hill.

The treatment of Secondary Modern Schools is the only part that is truly supplementary to Building Bulletin No. 2. While stoutly defending its much-criticised designs for combined classroom and dining accommodation in that bulletin (on the grounds that it was necessary to justify by detailed working-out so revolutionary a suggestion), the Ministry now gives a number of examples in which the dining space is combined with the entrance hall, the stage, or the small hall. Some of these are obviously open to criticism also, and it is strange that the Ministry has never elucidated its objection to the use of the large hall for dining; even here the possibility is admitted only with the unexplained qualification that not more than one "shift" would be possible. The difficulties of furniture-moving and of interfering with other activities can hardly be more serious than are presented by dual use of, say, classrooms, and one suspects here a survival of the Ministry's former doctrinaire attitude, to which using the hall for dining would be unwelcome simply because it is the obvious and traditional solution.

The effective demand for storage has apparently decreased from the days when official memoranda declared that one could hardly provide too much; now, alcoves in walls between classrooms or shelves along the corridor wall are recommended as sufficient, saving not only the floor area of the cubicle type of store but also the area of the portion of corridor associated with it. The Bulletin might perhaps have expressed a warning against inappropriate application of this economy: the cubicle is not mere storage but, suitably fitted, a useful extra teaching space in which advanced or backward groups can receive special attention and in which some manual work can be carried out.

The Bulletin gives many suggestions for Schedules of Accommodation; analysis of these shows that in modern schools the area of teaching space is expected to range between 52 per cent and 57 per cent of the total school area—leaving a margin for ancillaries that seem ample until one actually begins to plan. A distinction is established between the expressions "per pupil" and "per place"; the number of pupils is based on the number of forms and so approximates to the true population of the school, the provision of sanitary and cloakroom accommodation being related to it; the number of places is one of the convenient fictions by which different schools are put on the same footing for cost control. The number of pupils staying for school meals is no longer fixed at a minimum percentage; in this respect also the discretion and local knowledge of the Education authority are preferred to limits determined from above.

The requirements for Grammar Schools are thoroughly analysed; the special problems of this type of school arise from the development in recent years of the Sixth Form, with its requirements for special study, and the possibility that its further enlargement will upset the balance of accommodation determined on present numbers. Here, as always, the emphasis is on flexibility. Technical schools, promoted from their former mainly vocational status to one of equality with other types, and aiming at a general culture enriched by craft, industrial, or commercial interests, are liable to find themselves with too much little-used specialised teaching space and too few form bases; the elaborate technique of "load analysis" designed to eliminate these faults appears, fortunately, to be one for the administrator and not for the architect.

The reader of the Bulletin will be able to enter into the political arguments about multilateral and comprehensive schools with the advantage of knowing exactly what these terms mean; the Bulletin is, of course, scrupulously neutral on the issue, but does invite attention to the difficulties arising from mere size. Somehow these vast schools must be broken down into units in which the child can know, and be known by, the senior teacher responsible for his welfare; on the technical side, many problems of the large school as of the small await the development of a movable partition that combines the seemingly incompatible qualities of being both inexpensive and sound-proof.

It has already been said that this is not an easy book; it takes a whole day merely to go through its 81 pages. The difficulties, inherent in the subject might, however, have been

relieved by a simpler and more compressed English style ; time spent by its authors in achieving this would have saved the time and aided the attention of the thousands who must read the Bulletin. Perhaps, too, a crisper language would have made the realities of school life seem a little less remote, would have allowed the voices of teacher and child to be heard above the monotonous tones of the administrator. The matter of the Bulletin, however, is on the whole most convincing ; it assures the architect that the limits to his task are fairly if strictly drawn, and that sound principles are there for his guidance. Before him remains the prospect of an architecture austere indeed, but as lively and various as the great Design for Education which it forms part of and which it serves.

GOVERNMENT AND BUILDING

THE Chancellor of the Exchequer's contribution to the debate which followed the King's Speech last week has brought home to the country the grave economic straits in which Great Britain finds itself and also, though to a less serious extent, the other members of the sterling area.

As a nation we must raise output by harder work, and raise it with tightened belts, as the phrase has it. In this task the building industries will wish to take their full share. First, however, they must know what is required of them. Mr. Butler's references to building (reported on Parliament page) are seen to be in general terms only : more building work has been started than could be done with the labour and materials available ; it is proposed to reduce the amount of new work started " until the industry is abreast of its task, and to secure that the subsequent programme does not exceed the capacities of the industry at any one time." To achieve this and to speed up completion of projects Mr. Butler has announced that no new starting dates for building work will be granted for operation except for special schemes urgent in the national interest.

From this, housing is especially excepted, and in fact the Government intends gradually to introduce more housing into the building programme. It also intends to place the buying of timber once more in private hands.

In his speech on Tuesday night, Mr. Macmillan was unable to give particulars of what building work would be stopped to enable resources to be deployed on additional housing, but he did say that the various sides of the industry had been consulted with a view to achieving the desired result with as little dislocation as possible. The industry is right to expect that full details will not be long delayed. Like every industry, building has a natural flow under any given set of circumstances which cannot suddenly be disturbed without serious results ; the industry is less a single conduit than a series of pipes in parallel, and to shut off one tap is not necessarily to get an increased flow in the others. The danger we foresee is a dislocation of the industry which may well manifest itself in a migration of skilled labour to other jobs.

Meanwhile the Government, Mr. Macmillan said, will press on with securing the increase in materials production which is the key to output, and, as an immediate step, with plans in the housing field for getting more living units out of the present pool of labour and materials. The Ministry of Housing and Local Government is now showing at the Building Exhibition type plans implementing the terms of Circular 38/51 in which savings in the circulation space of a house are permitted. Some of these plans are reproduced in this issue (pp. 653–6) ; they had been prepared during Dr. Dalton's Ministry. It will not be denied that they show considerable savings over the extravagant types shown in the 1949 Housing Manual, but the question Mr. Macmillan and his advisers no doubt will ask themselves is : Do the revisions go far enough, and are the room sizes immutable ? Recent experiments in the practical field (among others by the London County Council which has cut the height of ceilings and the size of the principal bedroom) would indicate that the revisions do not go as far as they can without destroying amenity.

If this is so, the new type plans must be regarded by Mr. Macmillan less as a final step than as a half-landing, the more especially as the forthcoming increase in the rate for advances to local authorities will add to the cost of subsidised houses and so to the rents which are already higher, in many cases, than can be afforded.

THE TRAINING OF GENERAL FOREMEN

"THE building industry is not backward in the sense of tools and mechanisation being lacking. There is an enormous amount of inventiveness, but the people in the industry are not well enough trained. It is no good having very fine tools unless you have people who can use them, and my experience is that those engaged in building are not up to the use of the tools. There should be fewer people in the industry, they should know how to use the marvellous equipment available, and they should be well paid." Many will support this criticism, made by Mr. Howard Robertson at a recent meeting of the Architectural Association ; but at the same time it must not be thought that the organised industry is unaware of its failings and that nothing is being done to rectify them. Much, in fact, is being done, but progress, though steady, is necessarily slow.

We commend to the attention of our readers, for example, the fair success of the General Foremanship Courses in the Building Industry which were started as a result of a report adopted by the National Federation of Building Trades Employers in 1948 to set up a Standing Committee for the Training of General Foremen in the Building Industry, consisting of representatives of the federation itself, the Ministry of Education, the Association of Technical Institutions, the Association of Principals of Technical Institutions, the National Federation of Clerks of Works and Builders' Foremen, the London Builders' Foremen's Association and the Institute of Builders (in an advisory capacity).

The first action of this committee was to issue a Report on Training and a syllabus followed by Notes for the Guidance of Lecturers. Now comes the First Report on the work of the committee, dated October 1951, which shows that reasonably good progress is being made in evolving and developing training courses for the technical supervisory grades of the industry. The problem has been found to be a dual one, first, to help the men who already hold supervisory posts through sheer ability, but who have had no general technical education or instruction, and, second, to help the younger craftsmen in the industry who have successfully completed their craft apprenticeship to qualify as general foremen. Well-planned courses to these ends are now in progress at technical colleges in various parts of the country.

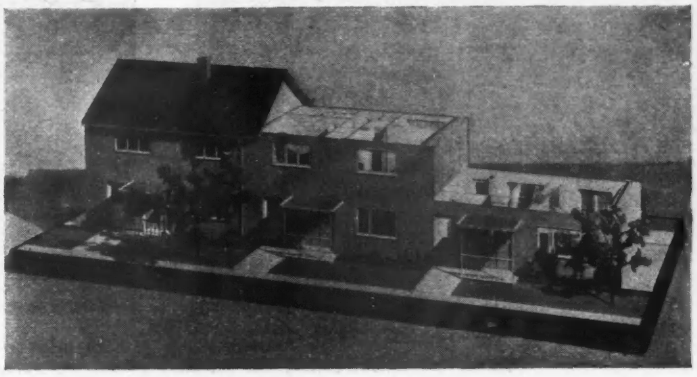
The ultimate need, of course, is to introduce some national qualitative certification, and the whole problem is being kept under constant examination by the committee with this end in view. If this excellent development is to achieve the success it deserves it will need more support from employers—first, in selecting and encouraging suitable candidates on their staffs to undertake the courses, and, second, in giving leadership and assistance in setting up and staffing the courses in more technical colleges. The obvious difficulty of getting men who already hold positions of responsibility to undertake any further form of training could probably be overcome, particularly at evening classes, by making the courses for them as informal as possible, and no doubt the committee have this particular aspect of the problem very much in mind. The younger, school-trained men, eager for advancement, should need little urging to take advantage of this opportunity to improve their status. Those of our readers who wish to pursue this subject further can obtain the three reports to which we have referred, free of charge, on application to Mr. J. A. Paton Walker, Secretary, Standing Committee for the Training of General Foremen, 82, New Cavendish-street, London, W.1.

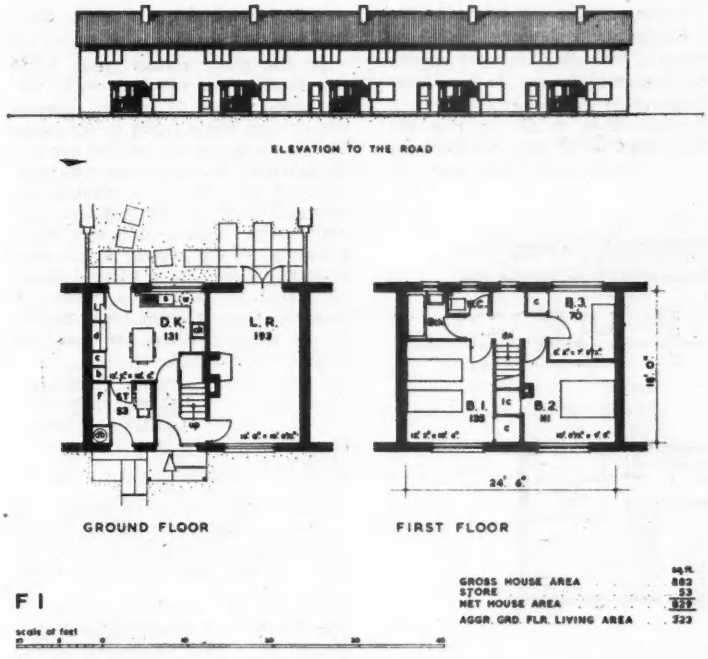
The organised employers are fully alive to the need for highly competent men in the supervisory posts of the industry and are doing all they can to get them. What of the operative grades ? As Mr. Robertson observed, it is no good having very fine tools unless you have people who can use them ; nor is it of much use to have highly trained supervisors if the operatives themselves remain unprogressive. There is great scope here for improvement and we trust that the operatives' organisations are alive to their responsibilities. The trade union ticket should be a jealously guarded symbol of efficiency, granted only to those who can show themselves to be keen and competent workers. In this respect the unions have a lot to learn from their opposite numbers in the United States.

MINISTRY HOUSE AND FLAT PLANS

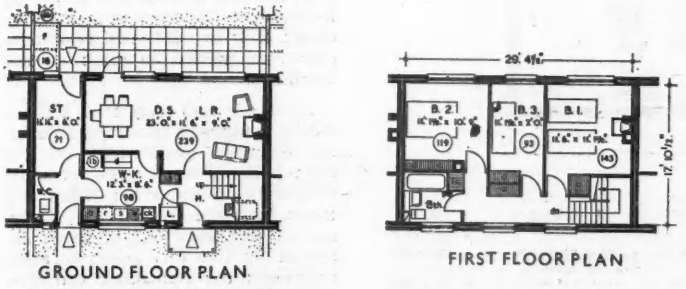
New Designs prepared by the Ministry of Housing and Local Government

J. H. FORSHAW, MC, MA, FRIBA, MTPI, Chief Architect





Seen above is a plan which gives accommodation for a family of six within 882 *sq. ft. This shows a reduction of* 168 *sq. ft. over the plan for a similar family as shown in the plan below, reproduced from the Housing Manual,* 1949. *The new design maintains the standards of living space, room sizes and equipment recommended by the Ministry.*
At the top of the page is a view of a sectional model of the new design.



URBAN TERRACE HOUSE **North aspect**
Five person, Floor area: House 1,050 sq. ft.; including store, fuel, W.C., 107 sq. ft.

INTEREST in the Housing Stand of the Ministry of Housing and Local Government at the Building Exhibition will chiefly centre on the designs for housing which follow out the advice given in Circular 38/51 that housebuilding costs could be reduced without lowering the essential standards of room space which were recommended in the Housing Manual, 1949.

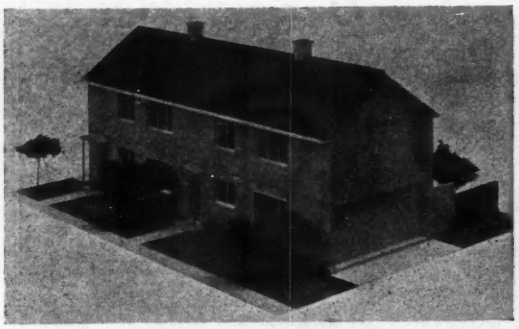
The stand displays a number of plans and models prepared by the Ministry to show how these savings can be made.

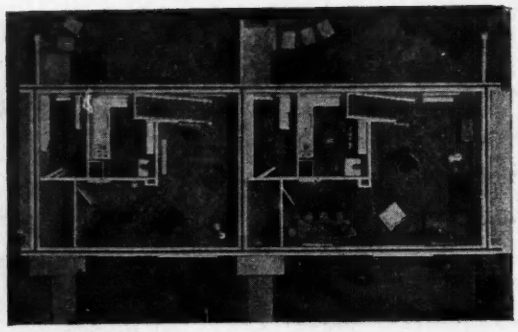
Two comparative plans (see this page) show the space savings gained by eliminating passage space. One plan, based on Housing Manual standards, is 1,050 sq. ft. in area and the area of the other, containing accommodation for a similar household, is 882 sq. ft.; a reduction of 168 sq. ft. The ground-floor living space of 323 sq. ft. in the smaller house is only 14 sq. ft. less than that in the larger.

These savings are further exemplified at the exhibition by six other plan arrangements based on the same principles and in which four three-bedroom houses give an average saving of about 150 sq. ft. compared with houses built in the last few years; comparable savings are made in the other two designs.

All maintain the standards of living space, room sizes and equipment recommended by the Ministry.

A sectional model illustrates the use of one of these plans in terrace design. In this arrangement there is a small entrance hall, access from front to back is through the store and kitchen instead of through a shared tunnel between houses, and access to the dustbin and fuel store is from the front of the house. Space and water heating services are provided by an improved type of open fire with a back boiler.





Experimental terrace houses at Coventry. Here the stairway rises from the living-room. Whole-house heating and hot-water services are provided by an independent boiler. The plans are below.

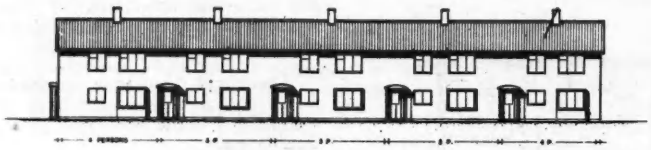
TWO COVENTRY DESIGNS

Two other sectional models are shown of terrace houses now under construction experimentally at Coventry. In one model (this page) the houses are planned with the staircase rising from the living-room. Whole-house heating and hot water services are provided by an independent boiler (minimum rating 32,000 B.T.Us. per hour) with radiators in the living-room, dining-recess and kitchen. It is estimated that, with an outdoor temperature of 30 deg., the ground- and bedroom-floor temperatures would be 65 deg. and 55 deg. respectively.

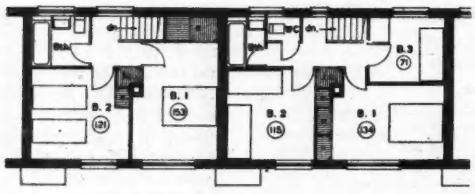
In the other model (page 655) the houses are planned with the staircase rising from the dining space ; the living-room is separate. The space and water heating service is provided by an improved type of open fire or stove (minimum rating 21,000–23,000 B.T.Us. per hour) with back boiler and with radiators in the dining space and kitchen. Using an appliance rated at 23,000 B.T.Us. it is estimated that the room temperatures would be as follows when the outdoor reading is 30 deg.:

	Two-bedroom house Degrees	*Three-bedroom house Degrees*
Living-room ..	65	65
Dining space ..	56	51
Bedrooms	46	41

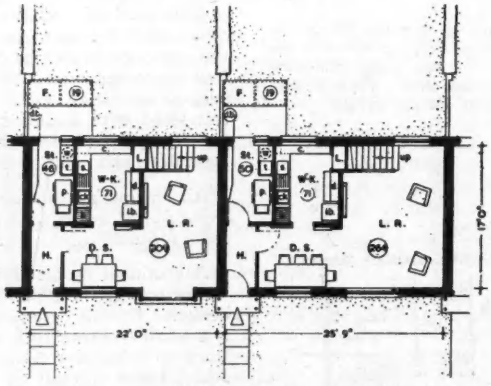
The principle of eliminating unnecessary passages and halls is also applied to a number of designs for flats in three- and five-storey blocks (see page 656).



ELEVATION TO THE ROAD



FIRST FLOOR



A2 4 PERSONS - GROUND FLOOR - 5 PERSONS A1

TWO & THREE BEDROOM TERRACE HOUSES
OPEN PLAN WITH WHOLE HOUSE HEATING - MODEL NO. 1

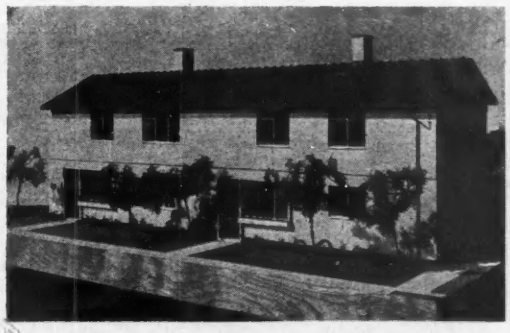
	A2 sq. ft	A1 sq. ft
GROSS HOUSE AREA (INCLUDING OUTSIDE FUEL)	774	895
STORE & FUEL	65	60
NET HOUSE AREA	709	835
AGGR. GND. FLR. LIVING AREA	280	330

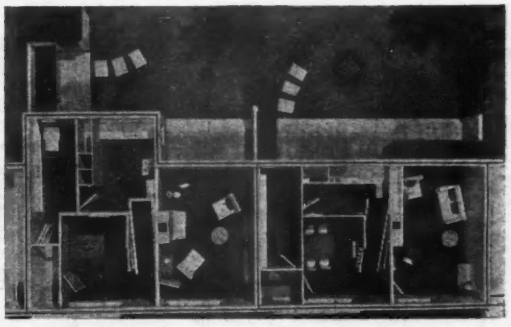
Scale of feet 0 10 20 30 40

NEW TYPE MAISONETTE

Designs and a model are shown of a new type maisonette, the " cross-over maisonette." It has economic advantages in high blocks as it enables the number of main staircases and lifts to be reduced. External access balconies are unnecessary and cross ventilation is provided in each dwelling. Plans of a nine-storey block of 53 dwellings incorporate 32 cross-over maisonettes ; only two lifts and two staircases are needed to serve all the dwellings.

Plans are also shown of a nine-storey composite block incorporating crossover maisonettes on the six top floors of the central spine with flats on the lower floors and throughout the end wings. There are 68 dwellings ; 62 of them are served by two lifts and two main staircases; the remainder comprise six flats in the centre of the block, served by an independen t staircase.





In these experimental houses, also at Coventry, the staircase rises from the dining space. The living-room is separate. Space and water heating is provided by an improved type of open fire or stove with back boiler and radiators in dining space and kitchen. Plans are below.

HOUSING FOR SPECIAL PURPOSES

This part of the exhibit is based on a report, issued this year by the Ministry, of a sub-committee of the Central Housing Advisory Committee. The report deals with the housing needs of old people, single workers, students, apprentices, disabled persons, district nurses and midwives. Special emphasis is laid upon the need for hostel accommodation for old people and the report recommends that the various types of special housing envisaged should be so situated that tenants are not segregated from the social environment and activities of their own neighbourhood.

There is a model of a hostel providing for 28 persons in 24 single rooms of 140 sq. ft., and two double rooms of 180 sq. ft. The plan includes communal room, kitchen, stores and staff room, guest room and warden's flat.

Another dioramic model shows a typical bed-sitting room for an elderly woman.

Photographs are shown of two completed hostels, one for students and the other for old people.

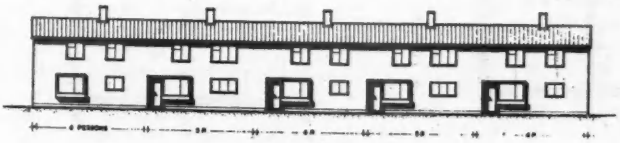
The permanently disabled are best housed in bungalows, and a plan and photograph of a completed scheme is shown. Special requirements in planning include ramps instead of steps, wider passages and doorways, sliding doors where practicable, holding bars in w.c's, suspended hand grips wherever the disabled person has to move from the wheel chair.

A two-storey house plan has been specially designed for the needs of a district nurse. This plan can easily be adapted as a normal family dwelling.

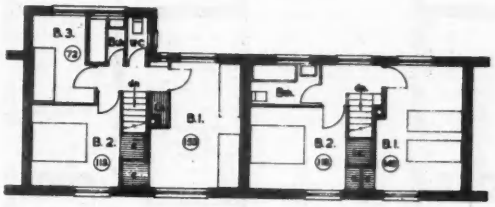
THE HOUSING MEDAL

With the object of encouraging and recognising the attainment of a high standard of design in local authorities' housing estates and houses, the Minister of Housing and Local Government, with the concurrence of the R.I.B.A., awards annually a number of medals and diplomas for housing schemes which are adjudged most meritorious.

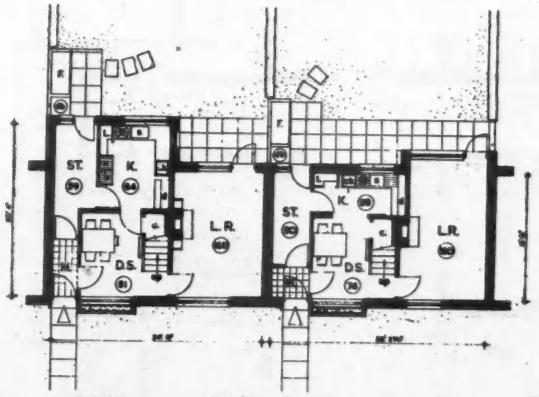
A volume contains photographs of all schemes which have so far received the award and there is a selected number of them featured as a mural display.



ELEVATION TO THE ROAD.



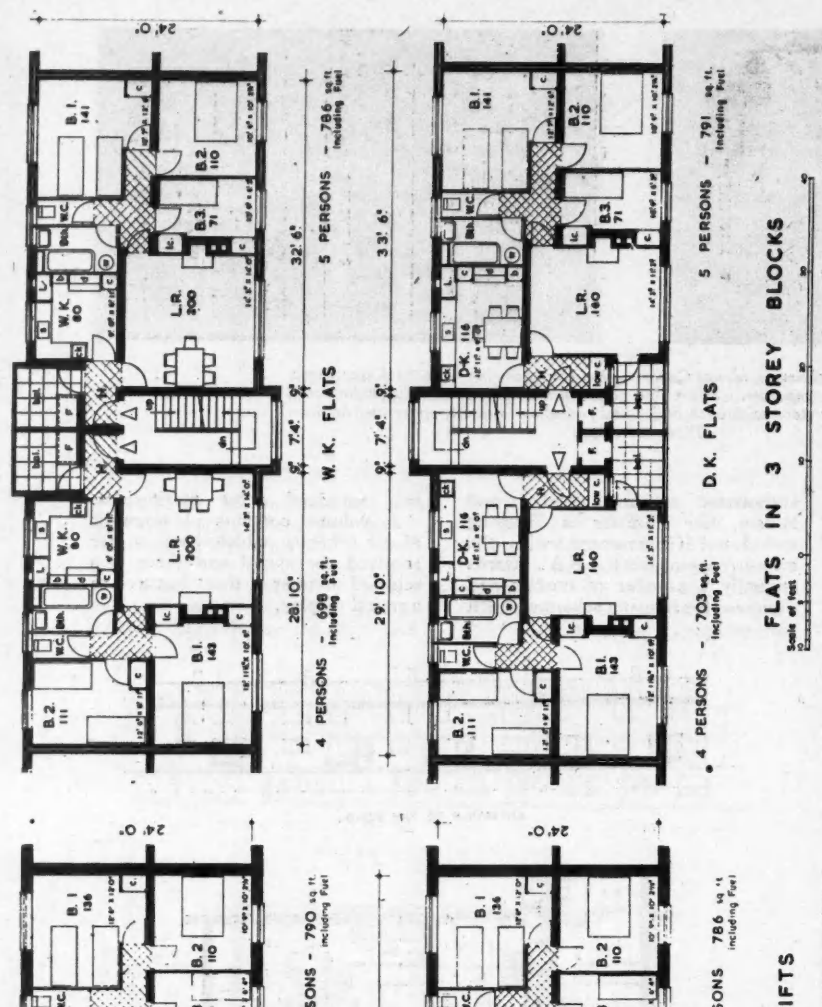
FIRST FLOOR



B 1 5 PERSONS GROUND FLOOR 4 PERSONS B 2

TWO & THREE BEDROOM TERRACE HOUSES
DOWN BURNING TYPE SOLID FUEL APPLIANCE IN LIVING ROOM WITH RADIATOR IN DINING SPACE.
MODEL NO. 2.

	4P	5P
GROSS HOUSE AREA INCLUDING OUTSIDE FUEL	784	897
FUEL 12 12	62	71
STORE 50 50		
NET HOUSE AREA	722	826
ASSR. GRD. FLR. LIVING AREA	292	325


24'0"
4 PERSONS - 698 sq. ft. including Fuel
W. K. FLATS
5 PERSONS - 786 sq. ft. including Fuel
4 PERSONS - 703 sq. ft. including Fuel
D. K. FLATS
5 PERSONS - 791 sq. ft. including Fuel
FLATS IN 3 STOREY BLOCKS
Scale of feet
4 PERSONS - 688 sq. ft. including Fuel
W-K. FLATS
5 PERSONS - 790 sq. ft. including Fuel
4 PERSONS 684 sq. ft. including Fuel
D-K. FLATS
5 PERSONS 786 sq. ft. including Fuel
FLATS IN 5 STOREY BLOCKS WITH LIFTS
1
2

NEW HOUSING DESIGNS PREPARED BY THE MINISTRY OF HOUSING AND LOCAL GOVERNMENT

LOW-COST HOUSING

"A Most Important Precedent"

THE view that they might prove to be more historic houses than those that had made history was expressed by Sir Stephen Tallents, K.C.M.G., when he spoke on November 8 at a luncheon in Northampton following the official opening of the prototype block of four terrace houses erected at Delapre to the design which won the competition organised by *The Builder* for a terrace house to cost, at December 31 last, not more than £1,000. Earlier in the morning Sir Stephen had formally opened for inspection (with a key presented by Mr. Geoffrey Hopkinson on behalf of the architects) the demonstration house, in the presence of a large party, among whom were representatives of the Ministry of Works, the Northampton Borough Council, the Northants, Beds and Hunts Association of Architects and the National Federation of Registered House-builders who were represented by their president, Mr. C. Douglas Calverley.

MR. R. G. MAIN, F.C.A., vice-chairman of *The Builder, Ltd.*, who welcomed the guests at the luncheon, said that the house they had visited that morning had been built as the result of the co-operation of the various bodies represented at the gathering. He especially welcomed Sir Stephen Tallents. Sir Stephen had served in various Ministries and the B.B.C., and was an authority on many subjects; he was an essentially human person, and as such was particularly fitted to open a house which, by virtue of its comfort and economy, would bring hope to the thousands who needed their own homes.

SIR STEPHEN said he was one of three assessors who judged this competition a year ago. It had been a most enterprising thought on the part of *The Builder*, and that day it had come to fruition at a most propitious time because obviously the Government would have to think again. They had admitted that housing was one of the most serious problems and the competition had provided what, if he was a Minister, he would have searched the country to find.

There had been 322 entries in the competition, many so good that it had been almost a photo-finish, but all the assessors had been agreed. He was now delighted to see all the promise of the design appearing in the block of houses they had visited that morning. It differed in several respects from Ministry requirements but anyone who had seen it with the furniture inside would be convinced that if the Ministry did not shortly reduce their size limits the public would have a grievance. He would if he had not got a house.

"HISTORIC HOUSES"

"This house has quite fulfilled expectations," added Sir Stephen, "although it has shown an increase of £133, due to increases of building materials and wages since January of this year. It is an improved, clear-cut and valuable contribution to the most burning problem of

THE OPENING CEREMONY. Seen above, at the ceremony of opening "The Builder" low-cost house at Delapre, Northampton, are (left to right) Mr. G. Hopkinson, Sir Stephen Tallents, Mr. J. L. Womersley (architect, with Mr. Hopkinson, of the house), Mr. C. T. Wilson (the contractor) and Mr. R. G. Main (vice-chairman of "The Builder" Ltd.

modern times. The promoters of the competition, the designers, the builder and the Northampton authorities are to be congratulated on having set a most important precedent. These buildings may prove to be more historic houses than those that have made history."

Congratulations were due to Mr. Ernest Howard, the quantity surveyor, for a very shining achievement, also to the builders, Messrs. T. Wilson and Son, Ltd., their staff and men, and all the sub-contractors for their fine organisation, because there was a long way to go between the design and the house.

The houses would be open from November 9 until December 2 for inspection, and he hoped they would be fully inspected by people from all parts of the country.

MR. J. LEWIS WOMERSLEY (who, with Mr. Geoffrey Hopkinson, designed the house) spoke next. After thanking Hemmings Bros. (Northampton), Ltd. for the attractive way they had furnished the house, he said that he should prefer to give a brief outline of the present position in regard to house production as seen by the technician, rather than to extol the virtues of the house they had seen that day. "On this latter point suffice it to say to the more damning of our critics that, thanks to Mr. Wilson, it has been built within a few pounds of the estimated price, rises in labour and material costs excepted, and also that the furniture went in *via* the front lobby with ease!

"Now the architect feels," continued Mr. Womersley, "that there can hardly be two views on any of the major issues concerning house-building at this difficult time, these being the need to build more houses more quickly; the need to build houses at less cost and thus to let them at lower rents; and the need to build the sort of houses in which housework is reduced to a minimum and the fullest possible use is made of the smallest possible amount of fuel.

"Fortunately all these fundamental requirements can be made to go hand in hand; and the intention of *The Builder* competition, as most of the competitors saw it, was to give architects an opportunity of planning houses to fit these fundamental needs—a planning from first principles, one might say—as a change from six years spent on combinations and permutations of the three types of living arrangements recommended by the Dudley Committee.

"Certainly Mr. Hopkinson and I jumped at our first chance of freedom to put the results of some years of housing research into plan form and, in fact, we produced two schemes.

BUILDING COSTS UP

"Now do not let it be thought that we are condemning either the Dudley Committee or the Ministry of Health Housing Manuals. Nobody has a greater respect for these documents than we have. But to help you to see things in their proper perspective let me remind those who may have forgotten it that when in 1944 the Dudley Committee made its recommendations about house and room sizes they were assuming that 'building costs would eventually stabilise at about 30 per cent above those prevailing in 1938 and 1939.' Instead, the position facing us to-day is that building costs are up by no less than 180 per cent.

"Surely, therefore, we have no alternative but to review all our ideas and ideals in the light of these present circumstances. The difference between the position in 1944 and to-day is, unfortunately, much greater than the value of the second w.c. which was jettisoned, with one or two other minor concessions, in Circular 38/51.

SIMPLIFICATION OF PLANS

"The house you have seen to-day is but one of many, designed by architects, either in *The Builder* competition or independently, which indicate that the profession is fully capable of reviewing its own ideas in an attempt to help solve the present housing problem," said Mr. Womersley.

"It illustrates certain principles of plan simplification which are gradually receiving general acceptance. The first of these is the elimination of the common through-passage in terrace housing and the use of its space to form part of the kitchen and store which in themselves provide the required alternative means of access to the rear, all within the privacy of each house. The second is the omission of the conventional staircase-hall, the stairs being allowed to open off either a small entrance lobby or even directly off the end of the living-room.

"It illustrates also some reductions in space provision which might well be allowed by the new Minister. The luxury of the second w.c. has already been abandoned as a result of the protests of common-sense Housing Committees. The next luxury to go is surely 15 ft. of the present standard of 135 sq. ft. for the first bedroom. The official position here is almost untenable for on what basis of logic is it justifiable to require a second bedroom, intended to take two children (who have the habit of becoming adolescent and even adult) and who normally occupy two single beds, to have a floor area of only 110 sq. ft. and yet to insist that the room occupied by a man and wife, usually containing one double bed, must have 135 sq. ft. As you have seen, 120 sq. ft. is adequate and the 10 sq. ft. excess over the second bedroom will take the cot. The London County Council have already reduced the sizes of their first bedrooms to 120 sq. ft., and the time is surely ripe for the rest of the country to be allowed to do likewise. The size of the third bedroom also could well allow of a reduction from 70 to 65 or even 60 sq. ft. The one you have seen to-day is 62 sq. ft.

"Allowing for a reduction of 15 sq. ft. on bedroom one and 5 sq. ft. on bedroom three, a saving of 20 sq. ft. on each floor can be made on a three-bedroom house which, at a conservative estimate of 28s. per sq. ft., would in itself reduce the cost of each house by £56.

"Other modifications can well be left to individual architects, but official acceptance of the foregoing principles would, in my view, be of great general benefit.

SIR STEPHEN TALLENTS, K.C.M.G., C.B., Hon.A.R.I.B.A., speaking at the luncheon which followed the opening ceremony.

"Finally, let me end on a note of appeal. Let us not fall into the trap of sacrificing quality for quantity. If we are to build more and simpler houses, let us continue to build them of good materials and to the designs and layout of qualified men. Architects of to-day have shown, in the new estates they have designed since the war and in competitions such as this, that they can produce whatever is required in amenity and economy.

MR. C. T. WILSON, the contractor, who was host at the luncheon, said he felt the success of the enterprise was reflected in the goodly number of people present, builders having come from as far as Grimsby, Birmingham and Nottingham. The opportunity of building a low-cost house had been a real pleasure to his firm. His firm were not magicians; they had employed labour from their contract building staff and people had been brought to it in the same orderly way they would be brought to any housing scheme.

He thought that after seeing the houses they would agree that craftsmanship had not been impaired by the incentive to increase production.

Responding, COUNCILLOR J. V. COLLIER, chairman of Northampton Finance Committee, said he felt that morning they had brought a ray of hope to thousands all over the country who were so sorely upset by the problem of finding themselves a home. "This is a practical example of what can be done to solve a problem in their midst," he added. "In the last 6½ years we have been striving to provide an ideal for the few rather than the many."

COUNCILLOR ASHLEY BAXTER, chairman of the Northampton Housing Committee, supported the response to Mr. Wilson. He said his committee had the difficult task of allocating houses to a waiting list of 3,000 and also selecting from many hundreds of applicants the few to whom they could give private licences. So he was delighted that the officers of his council in their spare time had won this prize. It was indeed a matter for satisfaction that this house had ended in bricks and mortar instead of just on paper.

THE BUILDING EXHIBITION OPENS

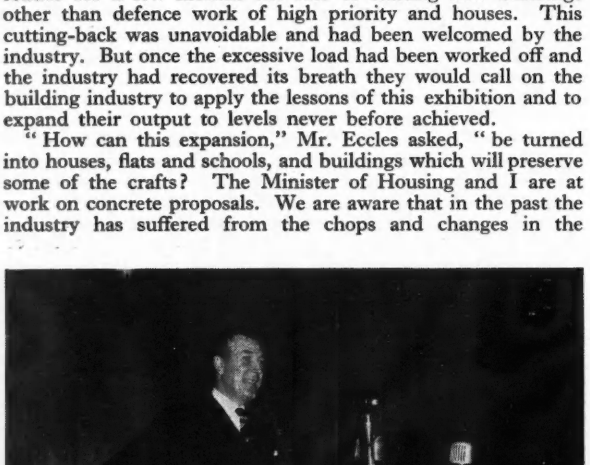
The Minister of Works at Olympia

MR. A. GRAHAM HENDERSON, A.R.S.A., President of the Royal Institute of British Architects, took the chair at the opening by Mr. David Eccles, Minister of Works, of the Building Exhibition at Olympia on Wednesday.

MR. DAVID ECCLES said that he could sum up the Government's industrial front in three short sentences: To disentangle ourselves from badly chosen and over-extended commitments; to concentrate our resources for attacking old problems in new ways; and to make fresh records in production where production was needed most.

How did this policy apply to the building industry which was their and his chief concern? On taking office the new Government found that more buildings had been begun than could conceivably be economically completed with the available labour and materials. Therefore they had no option but to reduce for a few months the rate of starting new buildings other than defence work of high priority and houses. This cutting-back was unavoidable and had been welcomed by the industry. But once the excessive load had been worked off and the industry had recovered its breath they would call on the building industry to apply the lessons of this exhibition and to expand their output to levels never before achieved.

"How can this expansion," Mr. Eccles asked, "be turned into houses, flats and schools, and buildings which will preserve some of the crafts? The Minister of Housing and I are at work on concrete proposals. We are aware that in the past the industry has suffered from the chops and changes in the pontifical pronouncements of Government planners. Mr. Harold Macmillan and I are businessmen and we know what it means to be messed about. If we were in your shoes we might well be a little sceptical, a little apprehensive of weathercock planning. We should want from the Government a firm long-term programme on which the industry could rely. The Ministers concerned will, as soon as possible, try to give you such a programme on which you can rely."



A picture taken at the opening of the Building Exhibition at Olympia on Wednesday. Left to right: Mr. David Eccles, Minister of Works, who opened the exhibition; Mr. A. Graham Henderson, A.R.S.A., president of the Royal Institute of British Architects; and Mr. Stephen Hudson, president of the National Federation of Building Trades Employers.

They would ask, where were the materials coming from? He could not speak for steel and timber except to say that whatever building programme the Government put forward it would have to be matched by an adequate supply of both.

"Take for example bricks," Mr. Eccles continued. "There must be something wrong, but curable, when a shortage of production in the brickfields results in a very large number of men going slower on the building sites than they would do if the supply of bricks were assured. I shall talk this over with the brickmakers and ask them to tell me how output can be increased; and then I can go to my colleagues for the help which practical men have convinced me it is necessary to provide. The same method of consultation followed by action will be applied to other scarce materials."

Mr. Eccles said that when management and men could see a better supply of materials coming forward it was possible to begin to talk about improved productivity in the building industry, and he did not forget the part that the architect could play in designing buildings for economy in materials. On the management side there were always new methods to try out and new ideas to be seized.

On the labour side he could well understand the operative's fear of working himself out of a job while material shortages persisted. "When the Government, by their long-term programme of work to be done and their efforts to secure more materials, succeed in giving management confidence then I think we shall have a right to ask management to hand on that confidence to their men," Mr. Eccles continued.

The position to-day was unsatisfactory for reasons which they all understood. Bonus schemes and incentive payments were in operation on less than one-third of the sites. "We want managers and men to work faster without loss of standards, to earn more by doing so, and to keep more of what they earn," the Minister added.

CONFIDENCE TO EXPAND

"The essence of what I want to say is this: His Majesty's Ministers will try to give the building industry the long term confidence to expand, but the expansion itself is your job. We shall set our faces against badgering and bewildering you with instructions and controls. We aim to make it possible for you to recapture the rhythm and pace that enabled the industry to put up 350,000 houses a year before the war."

Proposing a vote of thanks to the Minister for opening the exhibition, MR. STEPHEN HUDSON, president of the National Federation of Building Trades Employers, said that builders wanted to face the challenge of the times realistically and optimistically, and they believed, like the Government, that this challenge could be met. They for their part offered the nation the best services they could give to help in solving the problems satisfactorily.

NOTES & NEWS

LOWER-COST HOUSING

MR. A. R. F. ANDERSON, F.R.I.B.A., vice-president, the Architectural Association, will take the chair at a lecture on "Lower-cost Housing" to be given in the Cinema, off the National Hall Gallery, at the Building Exhibition, Olympia, at 3 p.m. tomorrow (Saturday, November 17), by Mr. Arthur Kenyon, C.B.E., F.R.I.B.A., M.T.P.I. Admission is free.

COVENTRY CATHEDRAL

MR. BASIL SPENCE'S spirited and sensible defence of his design for the new Coventry Cathedral last Saturday at the Coventry Diocesan conference will win him support even among his severest architectural critics.

Replying to critics who objected to the modern style of the cathedral, which one delegate said "looks like a factory," he said: "I am a traditionalist. If there was no modern movement throughout the ages we should still be building churches in the Norman style. We should not have King's College, Cambridge, or St. Paul's Cathedral.

"I am the best type of traditionalist because I am coping with economic conditions as I find them and am using labour and machinery which is to hand."

THE A.B.S. COMPETITION

ALREADY the Architects' Benevolent Society's competition for a Monument to the Passing of the Good Old Days of Architecture is assured of a degree of success which can be described as "moderate." The committee hope that architects will not defer entering for it until too late so that, by the time sending-in day (December 3) arrives, the success can be described as "overwhelming."

Photograph by Sydney Newbery.

Mr. Michael Pattrick, A.R.I.B.A., the new Principal of the Architectural Association School of Architecture. (*See Note.*)

In several cases an "office entry" is being submitted, the staffs of offices contributing ideas and draughtsmanship to a joint design or designs; the committee commend this idea for general adoption and hope that every office in the country will produce at least one design. A copy of the conditions is obtainable from the society's secretary, 66, Portland-place, W.1, in exchange for a "non-returnable deposit" of 10s., which goes to the Centenary Appeal Fund. Mr. Rowland Emett has now been added to the jury of assessors.

A.A. SCHOOL PRINCIPAL

THE COUNCIL of the Architectural Association has appointed Mr. Michael Pattrick, A.R.I.B.A., Principal of the A.A. School of Architecture.

Mr. Pattrick was educated at Oundle School and received his architectural training at the A.A., where he was awarded a number of prizes. After leaving the school in 1936 he entered private practice and also held teaching appointments at Cambridge University and the Liverpool University School of Architecture. During the war he was an architect in charge of various projects for the Ministry of Supply and the M.A.P.

Since 1945 he has been engaged in private practice and some of his industrial work was included in the R.I.B.A. Exhibition of Industrial Architecture. He is doing housing work at Welwyn. He was also concerned with teaching at the A.A. School, and in 1949 became director of technical training there. Mr. Pattrick has been acting principal since July last.

THE SOUTH BANK'S FUTURE

THE *Sunday Times* has announced that Mr. Hugh Casson, R.D.I., F.R.I.B.A., regrets that, owing to his commitments, he will be unable to act as one of the three judges in connection with the competition on the South Bank's future recently organised by that newspaper. Mr. Casson's place will be taken by Mr. John Summerson, B.A.(Arch.)Lond., F.S.A., Curator of Sir John Soane's Museum. Mr. Casson is at present engaged with Mr. R. H. Matthew, A.R.I.B.A., Architect to the L.C.C., on making a report for the Government on the immediate future of the site.

OXFORD STORE PLAN REJECTED

OXFORD CITY COUNCIL endorsed on November 5, says *The Times*, the decision

COMING EVENTS

FRIDAY, NOVEMBER 16

ROYAL INSTITUTION.—"New Materials in Engineering," by Dr. T. E. Allibone, F.R.S. 21, Albemarle-street, W.1. 9 p.m.

SATURDAY, NOVEMBER 17

BUILDING EXHIBITION.—"Lower-cost Housing," by Mr. Arthur W. Kenyon, C.B.E., F.R.I.B.A., M.T.P.I. The Cinema, off National Hall Gallery, Olympia, London. 3 p.m.

BUILDING TEACHERS' CONFERENCE.—Conference to discuss, "What the Building Industry Expects from the Technical Colleges." 82, New Cavendish-street, W.1. 10.30 a.m.

ECCLESIOLOGICAL SOCIETY. — "Charterhouse—The London Home of the Carthusians," by Lord Mottistone, F.R.I.B.A. Archbishop Davidson Institute, Lambeth-road, S.E.1. 3 p.m

TUESDAY, NOVEMBER 20

R.I.C.S. QUANTITY SURVEYORS COMMITTEE.—Annual dinner at which Mr. David Eccles, Minister of Works, is expected to be present. Grosvenor House, Park-lane, W.1. 7 p.m.

CHADWICK PUBLIC LECTURES (BOSSOM GIFT LECTURE).—"The Health of Cities: Some Problems Arising from Congestion and Overbuilding," by Professor William Holford, M.A., F.R.I.B.A. 90, Buckingham Palace-road, S.W.1. 2.30 p.m.

MINISTRY OF AGRICULTURE AND FISHERIES.—Opening of Grain Drying and Storage Conference. Co-operative Hall, Railway-street, York. 10.30 a.m.

WEDNESDAY, NOVEMBER 21

R.I.C.S.—Mr. H. A. Close will address a meeting of quantity surveyors on "The Evolution of the R.I.B.A. Form of Contract." 12, Great George-street, S.W.1. 6 p.m.

NATIONAL HOUSING AND TOWN PLANNING COUNCIL.—Housing and Town Planning Conference. Bournemouth. Continuing until November 23.

ROYAL SOCIETY OF ARTS.—"The Reclamation of Abandoned Industrial Areas," by Professor L. Dudley Stamp, C.B.E. John Adam-street, Adelphi, W.C.2. 2.30 p.m.

ENGLISH JOINERY MANUFACTURERS' ASSOCIATION.—Annual dinner and dance. May Fair Hotel, Berkeley-street, W.1. 7.30 p.m.

NATIONAL FEDERATION OF ROOFING CONTRACTORS.—Annual banquet. Grosvenor House Hotel, Park-lane, W.1. 7.15 p.m.

THURSDAY, NOVEMBER 22

BUILDING EXHIBITION.—"Building Opportunities in Canada," by Mr. I. M. Leslie, J.P., Hon.A.R.I.B.A. The Cinema, off National Hall Gallery, Olympia, London. 3 p.m.

TOWN AND COUNTRY PLANNING ASSOCIATION (STUDENTS' PLANNING GROUP).—"The Obsolete Street," by Mr. Furneaux Jordan, F.R.I.B.A. 28, King-street, Covent Garden, W.C.2. 6.15 p.m.

INSTITUTION OF SANITARY ENGINEERS.—"One-Pipe Plumbing—Some Recent Experimental Hydraulics at the Building Research Station," by Mr. A. F. E. Wise. Conference Room, National Hall Gallery, Olympia. 5.30 p.m.

ROYAL SANITARY INSTITUTE.—"The Main Drainage of Shrewsbury—Past, Present and Future," by Mr. F. R. Dinnis, A.M.I.C.E., and "Everyday Problems in the Remedying of Defects in Dwellinghouse Property," by Mr. E. N. Wakelin. The Castle, Shrewsbury. 10.15 a.m.

FRIDAY, NOVEMBER 23

BIRMINGHAM AND FIVE COUNTIES A.A.—"Architecture in England during the Second Half of the Nineteenth Century," by Professor A. E. Richardson, R.A. Royal Birmingham Society of Artists' Galleries, New-street, Birmingham. 6 p.m.

PHYSICAL SOCIETY (ACOUSTICS GROUP).—Discussion on the acoustics of the Royal Festival Hall. 66, Portland-place, W.1. 4.30 p.m.

R.I.C.S. (MIDDLESEX AND URBAN ESSEX JUNIOR BRANCH).—Annual dance. Hendon Hall Hotel, Ashley-lane, N.W.4. 7.30 p.m.

SATURDAY, NOVEMBER 24

PROVIDENT INSTITUTION OF BUILDERS' FOREMEN AND CLERKS OF WORKS.—Cabaret and dance. Town Hall, St. Pancras, N.W.1. 7.15 p.m.

of its planning committee to reject an application by F. W. Woolworth and Co. to provide a store and office accommodation at the Clarendon Hotel in Cornmarket-street. The hotel, formerly a posting house, was sold to the company in 1939 and used during the war as an American Red Cross club.

ACOUSTICS OF THE R.F.H.

THERE is to be a meeting at the R.I.B.A., on November 23, to discuss the acoustics of the Royal Festival Hall in the light of the first few months' experience, and to see what lessons can be learnt for the future. The meeting is being convened by the Acoustics Group of the Physical Society, and architects are invited to be present. Mr. Parkin and Mr. Allen, of the Building Research Station, will introduce the discussion and Mr. Bagenal will speak. A number of musicians and music critics are expected to contribute their views.

RETIREMENT POSTPONED

THE BOARD OF MANAGEMENT of the School of Planning and Research for Regional Development announces that, owing to an unforeseen change of personal circumstances, Mr. E. A. A. Rowse has now found it possible to withdraw his resignation as principal of the school, and to postpone his retirement for the time being.

ARCHITECT'S APPOINTMENT

MR. R. R. ALEXANDER, A.R.I.B.A., A.M.T.P.I., Borough Architect of Dewsbury has been appointed City Architect at Lincoln.

BIRMINGHAM APPOINTMENT

MR. G. W. CHANDLER, M.I.Mun.E., senior housing officer in the Birmingham Public Works Department, has been appointed Deputy City Engineer and Surveyor in succession to Mr. D. G. Bevan, who retired recently.

PROFESSIONAL ANNOUNCEMENT

MESSRS. DAVSON AND PRICHARD, chartered quantity surveyors, of 72–74, Victoria-street, S.W.1, have taken MR. V. C. DOUGLAS, A.R.I.C.S., into partnership. The style and address of the firm remain unchanged.

FROM "THE BUILDER" OF 1851

Saturday, November 15, 1851

The following appeared over the pen-name of "Footpad."

ST. JAMES'S PALACE AND PALL MALL.—How long is that heterogeneous collection of unsightly and mean looking buildings, called St. James's Palace, to be allowed to remain in its present state? Placed in immediate contrast with so many magnificent private residences, it serves merely as a reflection upon the boasted loyalty, public spirit, and taste of the age. At the same time might be effected that most desirable improvement first suggested in the columns of *The Builder* of continuing Pall-mall to Green-park, clearing away the intermediate houses between the Earl of Ellesmere's and the Duke of Sutherland's, and thus giving a grand finish to one of the noblest thoroughfares which this or any other capital can boast. At all events, something should be done to the palace, unless it is to remain a monument to national disgrace.

NEW WORKS MINISTER FAVOURS COMPETITION

"Resources Must be Stretched"

AS reported briefly in our last issue, Mr. David Eccles, Minister of Works, proposed, and Sir Stephen Tallents, Hon.A.R.I.B.A., seconded a vote of thanks to Mr. A. Graham Henderson, president of the R.I.B.A. at the general meeting inaugurating the 1951-52 session of the Institute held at 66, Portland-place, on November 6. Both proposer and seconder commented on various points which were raised by Mr. Henderson in his presidential address (also reported last week) and we give the following extracts from their remarks:—

MR. DAVID ECCLES said:

It is a great pleasure to me to come here, and it is a great honour, for which I thank you. Mr. Attlee must have arranged the election specially so that the new Commissioner of Works could do his duty and come first to the architects and put his trust in them—which I do.

I listened with great interest to the President. His speech was given in accents which are more and more commonly heard in the great places of the State. Following the example of the Royal Institute of British Architects, Mr. Churchill has appointed a Scot to be Home Secretary and Minister for Welsh affairs. I must admit to a feeling of pleasure that for the first time we have chosen a Speaker who is a Highlander and who keeps order in the same endearing tones as you have used in delivering your address. We have known for a long time past that the Scots ran England. The interesting thing is that they are coming out into the open, and that is all to the good!

You said a few words about the Festival of Britain, Mr. President. They made me think that if I could have induced you to come upon my platform in these recent weeks and there to speak so dispassionately about the Festival of Britain, my seat, which you may think not to be very safe, might have been safer than it is. I think I should have had more votes! I have no notes here, but after listening to you I cannot help saying this about the Festival of Britain. I enjoyed the provincial exhibitions that I saw very much, but the South Bank disappointed me because it did not move me either to rapture or to anger. In my view, an exhibition, like a work of art or a new book, ought to excite strong emotion in one direction or another. We have become, I think, too placid, and we shall not either close the overseas trade gap of a thousand million pounds or build three hundred thousand houses or create one single work of art by keeping quiet and not making a fuss about anything. We do need, in all we are going to try to do, to give to architecture that sense of movement and excitement which has rather gone out of our lives.

Therefore, Mr. President, I pricked up my ears when you mentioned the word "competition." That word sounds very good to me. I have much to learn about competition in relation to architectural design, but it will take long and carefully delivered argument to persuade me that the closed shop is a good thing in any of its forms. I hope that you would agree with me that the business of a new Government is to discover talent and to reward it. The ways in which that can be done are many, but anyone who leaves out competition will, I think, meet with failure.

You also mentioned research. I am informed of the immense value of the contribution that the Royal Institute has made to the Advisory Council on Research, and I hope that I am right in thinking that that will not only continue but will develop. I liked very much the remarks relating research to day-to-day solutions of building problems. That seems to me eminently practicable. After all, we must arrive at a better distribution of our resources, and we must get more out of the resources that we have. If we fail to do this, we shall not be able to restore our national fortunes, and there is no doubt at all that research is absolutely essential if we are to make what we have go a bit further.

I cannot say anything about my Ministry's policy as yet, because although you are entering safely upon your second year, I have not yet begun my second week! I suspect, after taking a quick look, that what is really wanted from me at the moment in my Department is faith rather than works. It is you who ought to do the work, and it is I who ought to provide the faith; that is to say, confidence for the Ministry's future. I promise you that we will, at Lambeth Bridge House, do our best.

SIR STEPHEN TALLENTS in the course of his remarks also made a reference to competitions. He said:

I gather that the Minister is returning to the Ministry of Works, from what he said, to organise competitions in all directions I, myself, have a more modest task ahead of me, in that I am looking forward very much two days hence to seeing the house at Northampton which was built to the design of the winner of the competition organised by *The Builder* for a house which would cost not more than a thousand pounds. That is going to be a red letter day for me.

The Value of Research

As to research, it is 20 years ago since, as Secretary of the Empire Marketing Board, I was brought to see how vitally research underlay every form of production in the Empire. I was responsible for guiding the expenditure of one and three-quarter million pounds during the life of that Board on research. I cannot pretend to have attended the Congress [Building Research Congress] even as thoroughly as you did, Mr. President, but I was glad you brought out the vital advantage of research to the Ministry.

As to the Festival itself, is it not true to say that it did give certain architects an opportunity of doing what it is hard for them to find an opportunity of doing in these times of restriction; namely, using their minds and their pencils with some hope of seeing the results? Whatever else it has done, it has contributed a great deal to the profession. After all, we live in times—and here I speak as an outsider—of changing social habits, times in which every form of architecture, whether it be private or public or industrial or commercial, is changing rapidly. I came across a practical example only the other day; namely, the changes in internal hotel design which are being caused by air travel, with its short visits and light luggage.

I do feel that the Festival of Britain, in what it called upon British architects to perform, did show that they are able to adapt themselves quickly to novel conditions and it showed that not only to us at home but to overseas visitors. Whatever you think of the Festival of Britain, it did perform that service.

PROGRESS ON THE NEW TOWNS

4.—HATFIELD AND WELWYN GARDEN CITY

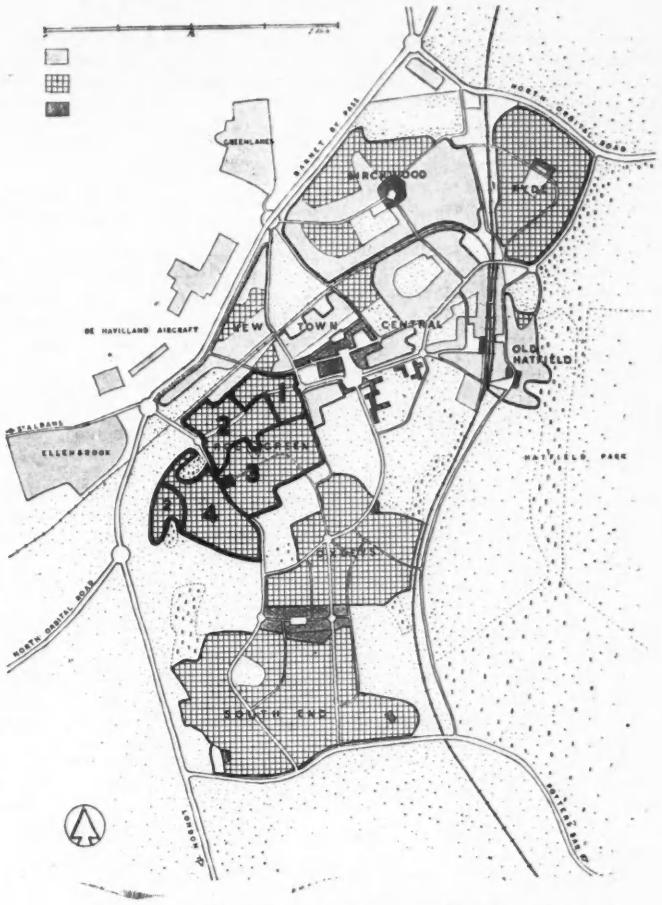
[*By Our Special Representative.*]

THOUGH they are being built for a common purpose—the relief of the congested areas of London—the diversity of the problems and opportunities facing the eight New Towns within a radius of some 30 miles from central London is most striking. Welwyn Garden City and Hatfield, those twin New Towns penetrated by the main east coast railway line to the north, and lying adjacent to the Great North-road soon after it emerges from the straggling suburban area, illustrate this well. Both come under the same Development Corporation, yet each differs widely from the other and from New Towns elsewhere in present development and the extent of industrialisation, and in the existence of transport and other facilities and services. While the two towns are to be developed as separate entities, lying adjacent to each other as they do—though separated by a permanent green belt—it was plainly desirable that there should be some co-ordination in their development, and this principle has been adopted.

Despite their dissimilarities, both New Towns have one important feature in common in that industrial development is far ahead of housing. In this respect they differ from the other New Towns so far designated in the London area. Welwyn Garden City, which has some 70 factories in being, is at present a considerable importer of labour, while Hatfield, although it has little industry within the actual designated area, can reasonably expect to find employment for the majority of its working population in the de Havilland aircraft works, which lie just across the main road to the west of the town. Many of the aircraft factory's employees at present journey daily from London to their work, and these it is hoped will ultimately be housed in Hatfield. Many people now resident in Hatfield find employment in Welwyn Garden City, and this is to be allowed for in a future development of the two New Towns, and is expected to be helpful to Hatfield in view of the comparatively small size of that town's designated area, which could not provide room for its proposed population of 25,000 and an extensive industrial area. Thus the two towns, though independent in most respects, will have a powerful economic link.

Hatfield New Town

Of all the proposed New Towns, Hatfield is the smallest, the ultimate population aimed at being only 25,000. Sandwiched between the Barnet By-pass on the west and the main railway line to the east, the area available for urban development is severely limited, and to accommodate the requisite population the relatively high net residential population of 37 persons to the acre has been decided upon. Open spaces within the town will be relatively smaller than in New Towns elsewhere, and considerable reliance is being placed upon the use of Hatfield Park, which successive Marquesses of Salisbury have thrown open to the public, as permanent open space. The narrowness of the site will in any case ensure that no housing can be much more than half a mile from one of the town's boundaries.



Plan of Hatfield New Town showing existing (lightly shaded) and proposed development.

One of the principal problems that has faced Mr. Lionel Brett, in drawing up the master plan for Hatfield, has been to co-ordinate the considerable existing development with the new building programme. In striking contrast to the earlier development at Welwyn, a tour of the area shows that much of the existing development at Hatfield exemplifies the type of haphazard building often seen between the wars, and in this respect it presents Mr. Brett with an unenviable and difficult task. Fortunately, however, most of this type of development is confined to the area north of the existing town centre area, generally known as New Hatfield—and which is also to form the nucleus of the town centre for the New Town—leaving the area to the south unimpeded for new growth.

The present population of Hatfield is about 8,000, and the future town centre already contains sufficient shops and public buildings to meet the town's needs during the present three-year programme. On its conclusion, i.e., in 1953, work will commence on the redevelopment and expansion of the town centre. Also in 1953 work is expected to begin on the South End neighbourhood, for which sewerage and services should by then be available.

Hatfield and Welwyn are unique among New Towns in that all work is being carried out by private firms of architects. Those employed to date at Hatfield are : Messrs. Brett and Boyd, Messrs. Henning and Chitty, and Messrs. Johnson and Crabtree. The co-ordinating architect and consultant planner is the Hon. Lionel Brett, M.A., A.R.I.B.A.

The three-year programme referred to may be summarised as follows :—

HATFIELD NEW TOWN: BUILDING PROGRAMME

1950 Roe Green neighbourhood	Unit 1	124 houses 81 flats
1951 Roe Green neighbourhood	Unit 2	
	Area A	171 houses 72 flats
	B	88 houses 48 flats
	C	30 private houses
	D	53 higher income houses
1952 Roe Green neighbourhood	Unit 3	
	Area E	218 houses
	F	209 houses
	Neighbourhood centre	6 shops Meeting hall Public house

G

The number of houses completed by the Corporation in Hatfield to date numbers only about 30, with a further 181 houses and flats under construction, and it is therefore early days to express an opinion on the scheme. Nevertheless, an examination of the housing in the Roe Green area shows a most welcome attempt on the part of Mr. Brett to break new ground in contemporary small house design, using largely traditional materials and avoiding the starkness of much "modern" design. The comfort and convenience of the occupants have evidently been given much thought. Heating arrangements are good, and have in some cases been tested out with the help of the Building Research Station at Watford. An innovation which should help to retain warmth indoors is the use of insulating board in top-storey ceilings, which is then plastered over direct in the ordinary way. Woodex-latex flooring is being used extensively on ground floors, and its resilience and warmth have commended it to the tenants no less than its relative cheapness has helped in keeping down costs.

As mentioned before, relatively dense development has been decided upon, but by careful layout any feeling of congestion has been avoided. To enhance the appearance of the neighbourhood when the work of landscaping has been completed, care has been taken to group the housing so as to avoid views of back gardens from the roads.

Many of the terraced houses have been built in staggered formation, an arrangement that both serves to avoid monotony and provides the occupants with additional privacy. The view of one of the back gardens reproduced on p.674 shows how the feature has been combined with the provision of loggias on the garden side to make a place where a family can sit in the sun and enjoy a degree of privacy not easily obtainable with terrace housing. Some of the houses have a living-room and kitchen on the open plan, which enables a view to be had from back to front of the house.

Costs have been carefully watched in drawing up designs, and the contract price for some of the narrow front (Type "N") terrace houses of 960 sq. ft. super was only £1,172 each, that is before recent rises in wages and costs of materials. Similarly, the contract price for the somewhat larger wide-fronted terrace (Type "W") houses, was £1,240 each.

With the object of achieving a balanced community from the start, a certain number of higher income group houses are being built. These, to be let at economic rents, naturally allow a wider margin for fittings, and have allowed the incorporation of such interesting work as floor-to-ceiling brick fireplaces built in buff coloured stock bricks, and more expensive firegrates and appliances.

Welwyn Garden City

Welwyn Garden City, as is widely known, was already a distinguished example of town planning before the New Towns as such were contemplated. Most of the existing development is the result of a plan prepared in 1919-20 for the old Welwyn Garden City Company, which sought to achieve the ideals of Sir Ebenezer Howard and other pioneers in the establishment of self-contained and balanced communities living in congenial surroundings.

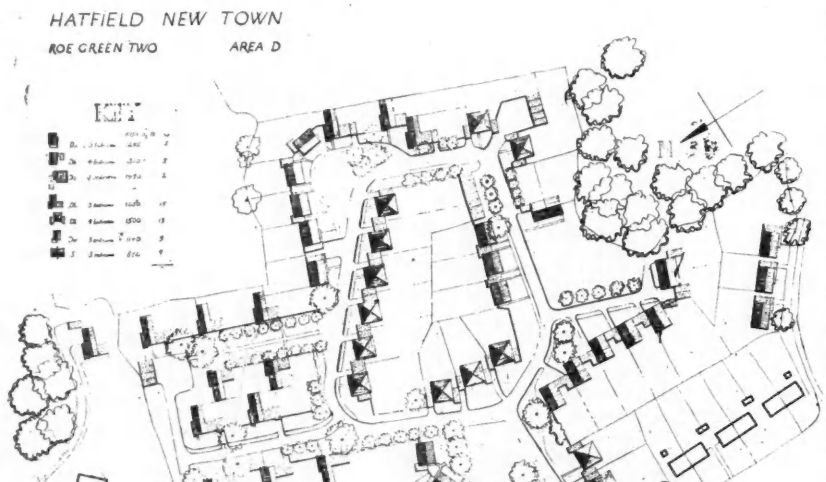
The ultimate population at present envisaged for Welwyn Garden City is 36,500, of which some 18,500 were already living in the town when the Development Corporation took over. In view, however, of the large area available—the designated area covers 4,231 acres—it might well be possible to extend this to, say, 50,000, without encroaching unduly on open spaces or resorting to denser development than is at present contemplated, i.e., an average over the whole *residential* area of 31.1 persons to the acre. Harlow New Town has already, by request of the Government, had its target population increased from 60,000 to 80,000, and a request for a similar increase at Welwyn would not be altogether unexpected.

Under the master plan for the Garden City, drawn up by Mr. Louis de Soissons, O.B.E., A.R.A., F.R.I.B.A., M.T.P.I., the building of the town in a "comparatively short space of time" is contemplated. This will allow churches, schools, halls, social service and health buildings to be erected as an integral part of the development, and to correct the monotony of incomplete residential areas.

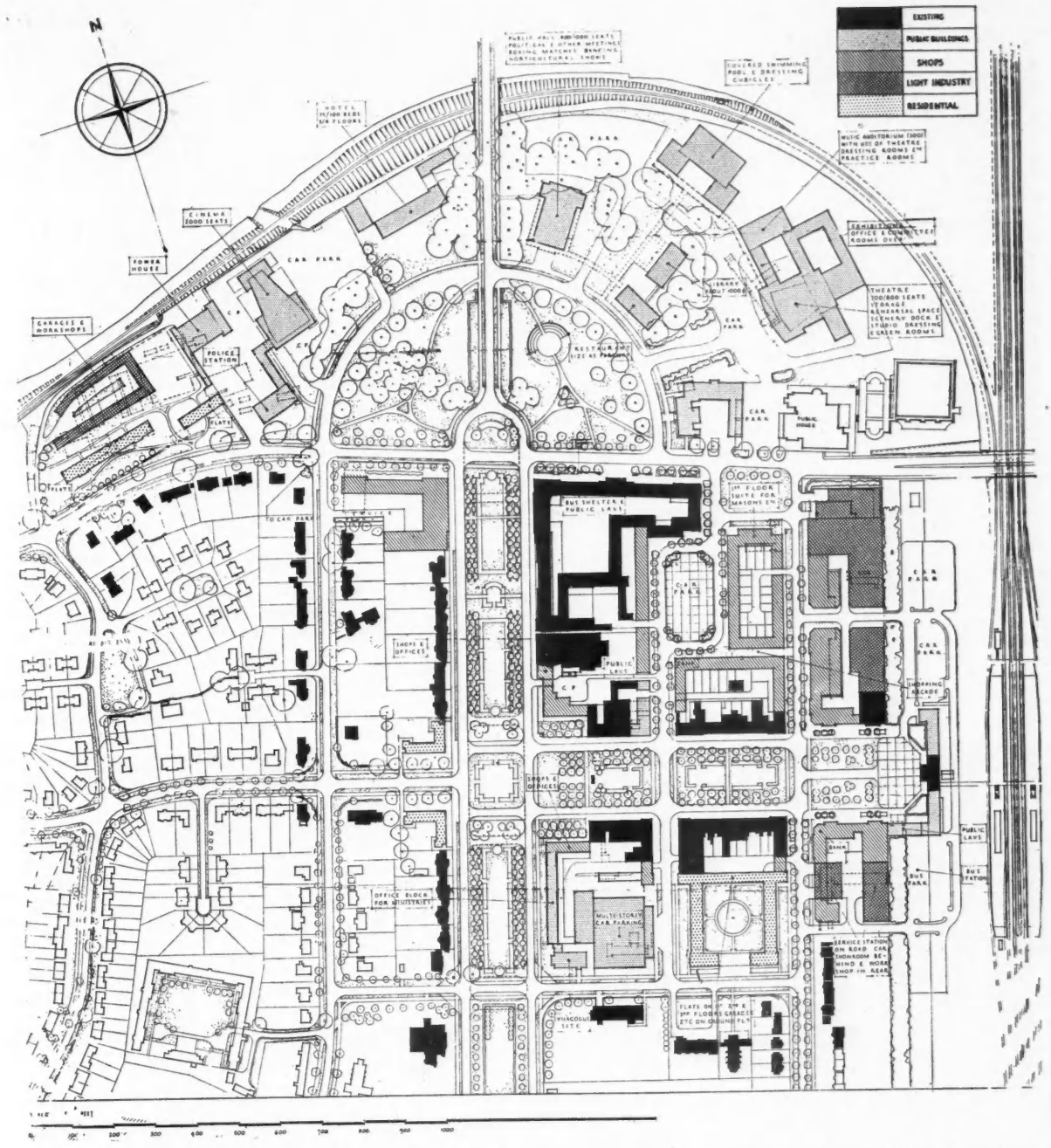
As already stated, the Welwyn Garden City Development Corporation has no architectural department of its own, and all future development will be carried out by private architects under the general direction of Louis de Soissons, A.R.A., and Partners, who were also responsible for all development from the formation of the old Welwyn Garden City Company up to the time that its assets were acquired by the Corporation. Existing building in the town was mainly in neo-Georgian style, a style which it is intended to retain in completing and rounding off the areas of existing development; many of the new schemes, however, will be given to different firms of architects, who will be allowed freedom to design in their own styles. In this way it is hoped to achieve interesting architectural variety. In general, however, the earlier type of good layout, with numerous closes and culs-de-sac will be retained; these have proved popular with residents, and provide planners and architects with a means of avoiding monotony in road layout.

A new feature of the housing will be a more varied grouping of privately-owned, monthly- and weekly-tenancy houses, as the various groups, according roughly to the income of the occupants, are designated by the Corporation. It is now considered that not only should there be an overall balance in the town of housing for the different income groups, but that there should be the right balance in each of the four main areas into which the town is fortuitously divided by the railway system, a practice not formerly followed.

New residential development completed since the Development Corporation took over from the former Welwyn Garden City Company has not been on a large scale, and consists of 116 dwellings—mostly in the Homestead Court flats scheme—but the number of dwellings under construction is now 226, and the estimated programme for 1952 is 500 dwellings, by far the greater part in the form of houses. On account of the over-industrialisation already referred to, industrial development has been restricted to minor extensions to existing factories. All industrial applicants are referred to



Housing layout at Roe Green, Hatfield New Town. Lionel Brett and Kenneth Boyd, AA.R.I.B.A., architects.



Plan of the town centre, Welwyn Garden City, showing existing and proposed development. Louis de Soissons, A.R.A., and Partners, architects.

the Board of Trade to see if they will be entitled to an Industrial Development Certificate and a building licence.

HOMESTEAD COURT

Homestead Court is the first major building contract to be completed by the Development Corporation and comprises 92 flats, exclusive of those for use by the resident staff, a restaurant, hotel rooms and garages. The scheme provides living accommodation for more than 150 people. It constitutes not only an extensive scheme of dwellings, but also an amenity for the whole town.

The central feature of the scheme both architecturally and in social significance is the restaurant block, comprising a main restaurant room seating 120, a private dining-room seating 30, and a lounge which will, if application for a licence is successful, contain a bar. The restaurant will serve both the tenants of the single-room flats on the floors above ; the tenants of other blocks ; and any member of the general public who wishes to use it. There is a private dining-room for private parties, business lunches, dinners and so forth. The lounge will be for the general use of anybody using the restaurant. The kitchens have been laid out and equipped on a scale consistent with a restaurant of good though not lavish standards.

The three storeys above the restaurant are devoted to single-room flats with communal bathroom and lavatory accommodation. Each flat is some 230 sq. ft. There are 19 flats on the first floor, of

WELWYN GARDEN CITY DEVELOPMENT CORPORATION
SCHEDULE OF DWELLINGS COMPLETED, UNDER CONSTRUCTION AND UNDER CONTRACT AS AT SEPTEMBER 30, 1951.

Area, Site or Neighbourhood	*Total completed*	*Total Under construction*	*Under Contract but not started*			*Total Dwellings*
			Houses	*Flats*	*Total*	
162 Houses, Cole Green-lane	—	47	115	—	115	162
50 two-bedroomed houses, Hyde Valley and Marley-road	—	46	4	—	4	50
8 houses, Woodhall-lane	8	—	—	—	—	8
4 houses, Lemsford-lane	—	4	—	—	—	4
108 houses, South Hackney	8	97	3	—	3	108
98 flats, Homestead Court	98	—	—	—	—	98
14 houses, Lemsford-lane	—	14	—	—	—	14
72 houses, Beehive-lane, S.E. Area	—	16	56	—	56	72
TOTAL	114	224	178	—	178	516

N.B.—*Completed :* Dwellings for which the Corporation has assumed the liability for insurance.
Under construction : Dwellings for which the individual foundations have been dug.
Under contract : Dwellings which have been the subject of a contract which has been let, but for which the individual foundations have not yet been dug.

which 16 will be let furnished at £4 10s. a week, including room service and meals in the restaurant. Thus they will be in effect residential hotel accommodation, though offering greater facilities for a private domestic life than most hotels. On the second floor 15 flats will be available for letting unfurnished at £7 12s. 6d. a month, and on the third floor a further 15 flats for letting unfurnished at £7 2s. 6d. a month. Each flat has built-in cupboards and power points sufficient for an electric ring upon which kettles can be boiled. There is also a small sink. In view of the restaurant facilities the flats are not designed to be self-contained from the point of view of cooking. A feature of these flats is a folding screen which can be pulled across to conceal the sink and miniature kitchen unit. It is believed that the flats will fulfil a long-felt need for accommodation for single professional men and women.

In the small block next to the restaurant are three staff flats and seven hotel rooms. The letting of the latter will correspond to normal hotel arrangements, and in a modest way this will help towards correcting a conspicuous deficiency in the existing town.

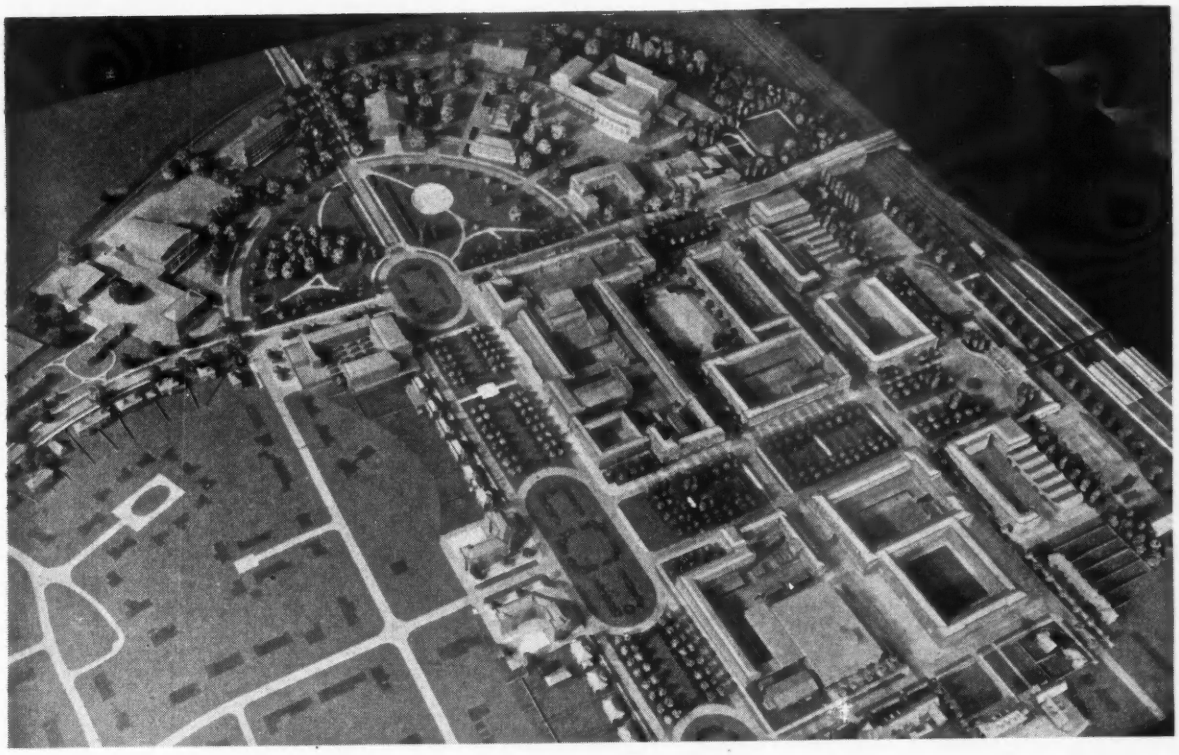
The remainder of the scheme consists of 28 two-roomed flats and 18 three-roomed flats. The former have a kitchen, bathroom, and lavatory and are provided with an electric cooker and with a refrigerator. The rent is £9 5s. 9d. a month, inclusive of rates. The area of each flat is 501 sq. ft. The three-roomed flats have a total area of 650 sq. ft., and are all in one three-storey block. The rent is £11 16s. 6d. a month, inclusive of rates.

All the flats will be provided with hot water and central heating from a central boiler house, which will be one of the considerable amenities of the scheme. Other amenities are the view over the playing fields to the south, which are to be a permanent feature of the town, and the landscape gardening which is to be carried out within the precincts of the scheme itself. Thirty-four garages will be provided for the use of tenants and there will also be storage for 40 bicycles. The rent of the garages will be 35s. a month and the monthly charge for storing a bicycle will be 2s. 6d.

The total cost of the scheme, including the equipment of the restaurant and the furnishing of the flats, is in the neighbourhood of £200,000. The architects for the scheme are Messrs. Louis de Soissons, A.R.A., and Partners. The two- and three-bedroomed flats were built by C. Miskin and Sons, Ltd., and the restaurant and hotel block by Welwyn Builders, Ltd.

The importance of Homestead Court is that it represents the first practical step towards infusing into the south-eastern area of the town a substantial middle-class element. The flats are intended for the higher income groups, and will also act as the pivotal point for the large number of middle-class houses which are shortly to be constructed in the Beehive-lane—Cole Green-lane area by the Corporation as well as for the private

A model of the town centre, Welwyn Garden City, showing the Campus, looking east.



A general view of the model of the town centre, Welwyn Garden City.

developers who will be building their own houses in the area.

The scheme is considered an ambitious one, but the Corporation believes that the quality of its contribution towards achieving a social and economic balance in the various parts of the town is so great that the expenditure would be justified on these grounds alone. Economic rents are charged throughout.

THE SOUTH-WEST AREA

Most of the new houses so far erected by the Corporation are to be found in the already largely built-up south-west quarter of the town, where development consists of filling in gaps in existing housing and making use of existing roads. The houses being built here accord with those already in existence, and are mostly of the monthly-tenancy type. This is balanced by the Local Authority's programme of weekly-rented houses. The reason for this is that it has so happened that the sites which can be developed first are those intended for better-class dwellings. Hitherto, two-bedroomed, three-bedroomed and larger dwellings have been constructed in proportions of about 3, 6 and 1. The present difference in cost between the two- and three-bedroomed dwelling is, however, so slight that there are likely to be comparatively few two-bedroomed houses in future schemes.

As in the case of the other New Towns, the private owner or developer cannot, of course, purchase the freehold of the property from the ground landlords, the Development Corporation. In this area it is only proposed to provide accommodation for an additional population of 1,200.

In the selection of tenants, the first priority at the moment is being given to building operatives, and following this are the people working in either Welwyn Garden City or Hatfield and living in London. Building licences will be issued firstly to local workers who live in London, and, secondly, to people performing essential work in either town.

The south-east area, in which is situated the Homestead Court flats scheme, already contains a community of some 10,000, and a major extension is contemplated to raise that to the region of some 18,000. A liberal infusion of monthly-rented and privately owned housing into the weekly-rented existing types is proposed in order to obtain a better balanced community. The south-east area contains by far the greater part of the town's industrial area.

Under the Welwyn Garden City Company, the most favoured of the four areas was the north-west, and it is here that one finds those truly delightful roads of substantial houses in a setting of trees and woods that have done much to commend Welwyn to public and planners alike. The existing population here is, however, only in the region of 1,100, and a major extension is visualised which will eventually increase the population to over 8,000. One of the area's greatest amenities, Sherrards Wood, is, however, to be left practically undisturbed, but as compensation for the loss of potential rateable value the Corporation has reserved the right to develop a considerable portion of another region of high-amenity value in the Maitland property.

The fourth area, the north-east, is at present practically devoid of development. Here the intention is, eventually, to accommodate some 4,600 persons, and to erect a number of factories.

Each of the above four areas into which the town naturally falls is to have its local shopping centre, a facility at present only available in the south-east quadrant.

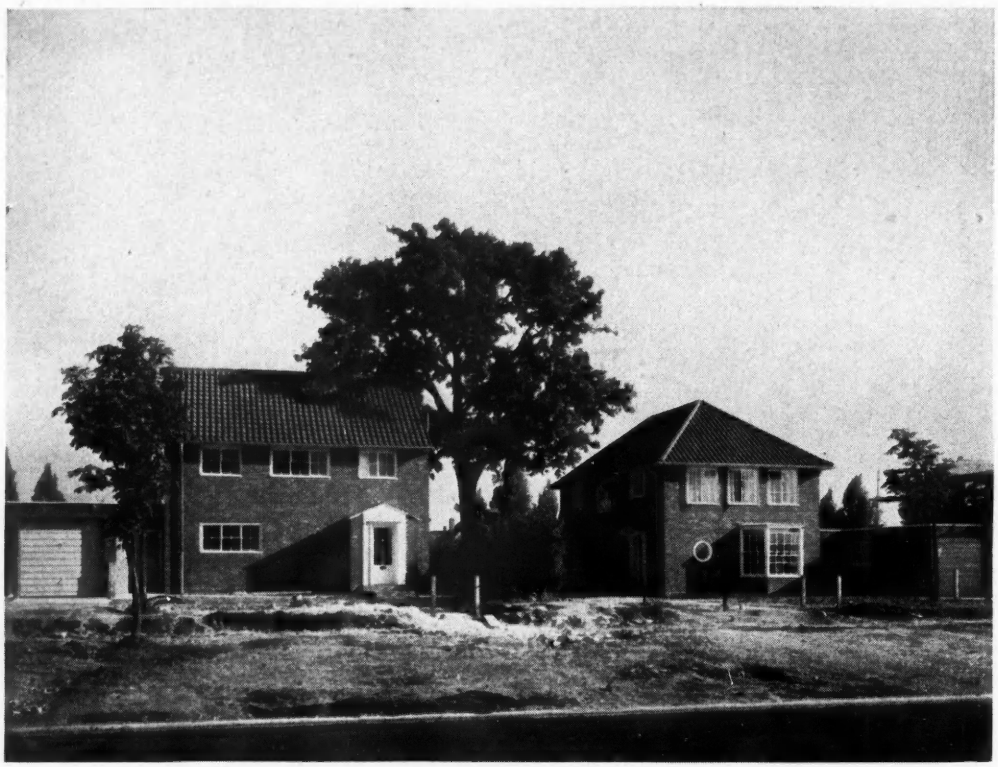
THE TOWN CENTRE

As the completion of the town centre has always been a matter of great public interest, the Corporation felt that a model showing the proposals for this part of their obligations would be a popular contribution to the town's Festival Week, and a model was accordingly prepared. This shows the location and probable height and style of the numerous buildings required for the centre of Welwyn Garden City. Many of these facilities are now urgently needed, and comprise the following :

(i) *Administrative.* Extensions to council offices ; divisional offices for the Hertfordshire County Council ; police sub-divisional headquarters ; courthouse ; offices for branches of Government departments.

(ii) *Cultural, educational and recreational.* Theatre and arts centre ; a large meeting hall for general purposes ; central library ; a covered swimming pool ; a synagogue ; a cinema ; and suites of rooms for hiring by various organisations.

(iii) *Commercial buildings.* This group includes shops, banks, a residential hotel, offices, restaurant, cafés, service station, certain flats, and a car parking building.



Two detached houses, with garages, South Parkway, Welwyn Garden City. Louis de Soissons, A.R.A., and Partners, architects.

In addition to the above buildings, there will be open-air car parks, a bus station with related taxi park and private car park; public lavatories, and perhaps a power house for a small district heating system for the campus buildings.

The model demonstrates the intention of the Corporation and its planning consultant, Mr. Louis de Soissons, to preserve the architectural character of Welwyn Garden City.

The scheme was drawn up after consultation with the Urban District Council, and the Corporation is hopeful that their proposals will be agreed with all the authorities concerned.

Existing services are expected to suffice for the needs of the town until about 1954, after which additional facilities will be required. An important matter at present awaiting decision by the Ministry of Health is the proposed new sewage scheme for Welwyn Garden City and Hatfield, the point at issue being whether the sewage is to be drained to the Lee Valley or the Colne Valley trunk sewers.

The Hertfordshire County Council is the education authority for the town, and an extensive school-building programme is planned to keep pace with housing development. Two new primary schools, Templewood School and Blackthorne School, have been completed.

Templewood School, illustrated on pages 672 and 673, is a one-form entry junior mixed and infants' school, which was one of the schools of the 1949 programme.

A point of special interest is the use of the circulation space as an extension of the classrooms. Each classroom has sliding doors between it and the adjacent corridor, and both these areas can be separated from the adjoining classroom and corridor by means of further sliding doors that can be used to isolate each classroom corridor unit.

ARCHITECTS, CONTRACTORS AND SUB-CONTRACTORS

Hatfield Development Corporation, Schedule of Building Contracts, architects and contractors : Eight workshops, Fiddlebridge-lane, Brett and Boyd, Campbell Estates, Ltd.; Roe Green scheme I, part 1, 119 houses, 36 flats, Brett and Boyd, H. C. Janes, Ltd.; Roe Green scheme I, part 2, five houses, 45 flats, Brett and Boyd, Y. J. Lovell and Sons.

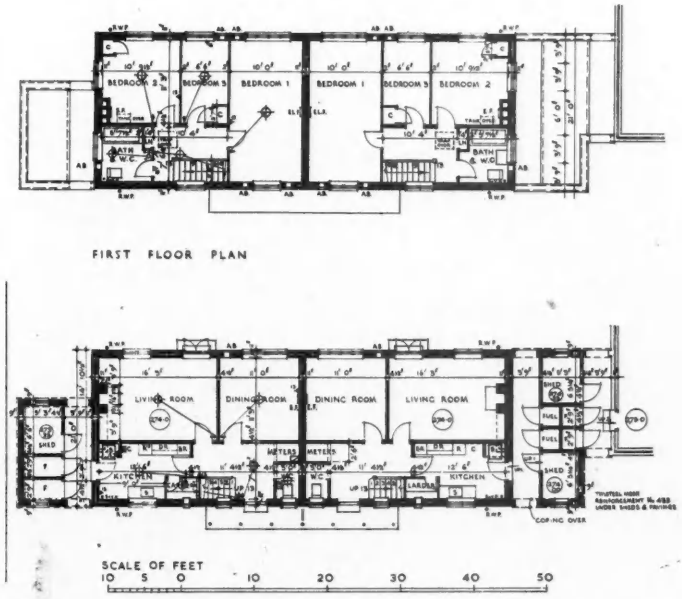
A closer view of one of the houses illustrated above.

Housing in Woodhall-lane, Welwyn Garden City. James and Bywaters, R.A., F.R.I.B.A., architects.

The names of the contractors for the following schemes are not yet known: Roe Green, scheme II, area "A" part 1, 52 houses, 66 flats, Brett and Boyd; Roe Green scheme II, area "B" part 1, 86 houses, Henning and Chitty; Roe Green scheme II, area "A" part 2, 119 houses, 6 flats, 22 garages, Brett and Boyd; Roe Green scheme II, area "B" part 2, 42 flats, garages, Henning and Chitty; Roe Green scheme II, area "D," houses, Brett and Boyd; Roe Green scheme III, area "E," Brett and Boyd; Roe Green scheme III, area "F," Johnson and Crabtree.

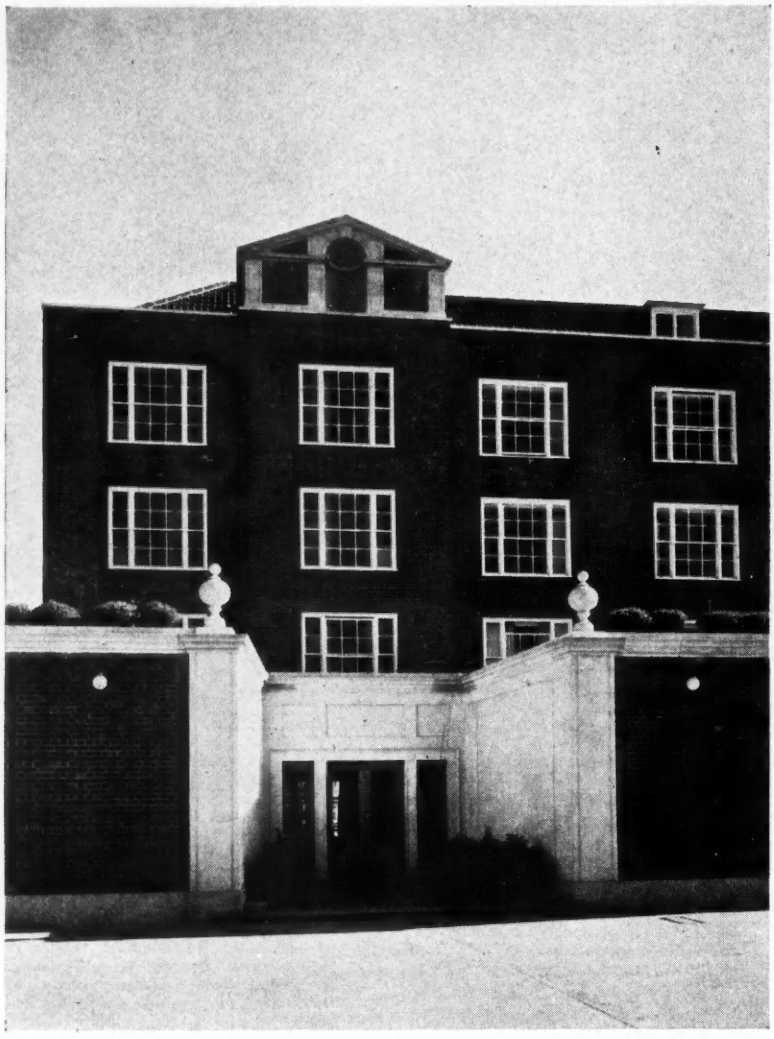
Contractors and sub-contractors employed on Homestead Court, Welwyn Garden City. The general contractors were C. Miskin and Sons, Ltd., for the flats and Welwyn Builders, Ltd., for restaurant and hotel blocks.

The contractors were: Kitchen equipment and ventilation, James Slater and Co. (Engineers), Ltd.; furnishings, Story and Co., Dunns of Bromley, St. Albans Co-operative Society, Ltd. and E. T. Tingey and Sons, Ltd.; electrical work, Eastern Electricity Board; R.C. frame and floors to block E, The Kleine Co., Ltd.; lift, Hammond and Champness; woodblock floorings, Stevens and Adams; lettering and signs, The Lettering Centre; bricks, The London Brick Co., Ltd., and Wiggins, Sankey, Ltd.; floor tiling, Semtex; asphalt tanking, flexible felt roofing and coloured asphalt flooring, Coverite (Asphalters), Ltd.; bar grille, Gaskell and Chambers, London, Ltd.; ironmongery, Nettlefold and Moser, Ltd.; sliding folding doors, P. C. Henderson; plumbing, Matthew Hall and Co., Ltd.; roof tiling, The Marley Tile Co., Ltd.; automatic stokers, Riley Stoker Co., Ltd.; R.C. floors to Blocks A-D, The Indented Bar and Concrete Engineering Co., Ltd.; sanitary goods, John Bolding and Sons, Ltd.; taps, Supataps F. H. Bourner and Co. (Engineers), Ltd.; window sash balancers, The Unique Balance Co., Ltd.; overhead garage doors, The Westland Engineers, Ltd.



Ground- and first-floor plans of terrace housing in Woodhall-lane.

Welwyn Garden City Development Corporation, Schedule of Building Contracts, architects and contractors:—Arrow, Ltd. (New Factory), Hyde Way, Louis de Soissons, Robert Hart and Sons, Ltd.; Blocks A-D, Homestead Court, Louis de Soissons, C. Miskin and Sons, Ltd.; Blocks E-F, Homestead Court, Louis de Soissons, Welwyn Builders, Ltd.; office extension, Midland Bank Chambers, Louis de Soissons, Ekins and Co., Ltd.; 14 houses, Lemsford-lane, James and Bywaters, D. C. Pearce and Sons, Ltd.; eight houses, Woodhall-lane, James and Bywaters, Newland Bros. (Builders), Ltd.; Skarsten factory extension, 21, Hydeway, C. W. Fox, D. C. Pearce and Sons, Ltd.; four two-bedroomed houses, Lemsford-lane, Louis de Soissons, Crook Bros.; 19 garages, Marley-road and Homestead-lane, Louis de Soissons, Welwyn Builders, Ltd.; 102 houses, four flats, two bungalows, 61 garages, South Parkway, Louis de Soissons, Welwyn Builders,



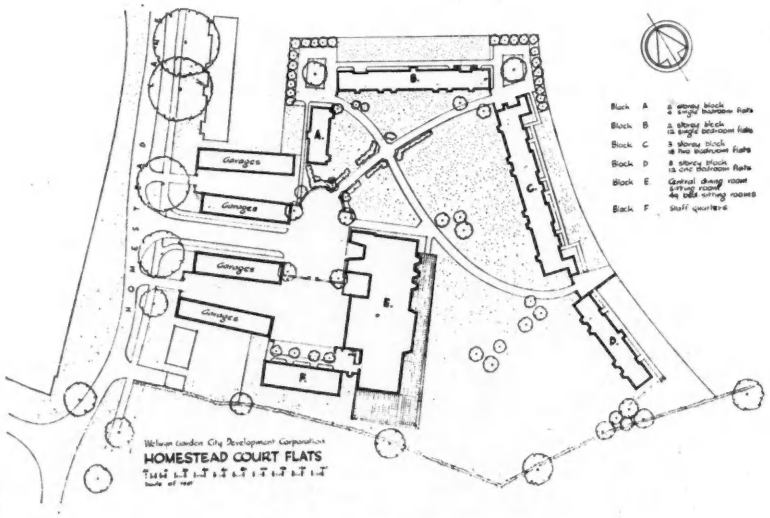
Ltd.; 50 two-bedroomed houses, Marley-road and Hyde Valley, Louis de Soissons, J. G. Gibbs and Sons, Ltd.; one garage, Handside-lane, Louis de Soissons, Fredk. Falmer; J. Wallace factory extension, Hyde-way, Louis de Soissons, Welwyn Builders, Ltd.; Denman Products, Ltd., new factory, Tewin-road, Louis de Soissons, Welwyn Builders, Ltd.; housing scheme, 1951, 72 houses, 47 garages, Beehive-lane, Louis de Soissons, Welwyn Builders, Ltd.; housing scheme, 1951, 53 houses, 20 garages, Sweet Briar, James and Bywaters, contractor not yet known; housing scheme, 1951, 118 houses, nine garages, Heronswood-road East, Michael Pattrick, contractor not yet known; 95 flats, 24 garages, Stanborough Green, Louis de Soissons, contractor not yet known; H. J. Edwards, Ltd., Howardsgate shop extension, Louis de Soissons, Ekins and Co., Ltd.; housing scheme, 1951, 162 houses, 27 garages, Cole Green-lane, Henning and Chitty, Welwyn Builders, Ltd.; shops and offices, Stonehills, Louis de Soissons, contractor not yet known; bungalow for Golf Club, C. W. Fox, contractor not yet known; south-east area—"B," 161 houses, Paul Maugher, contractor not yet known.

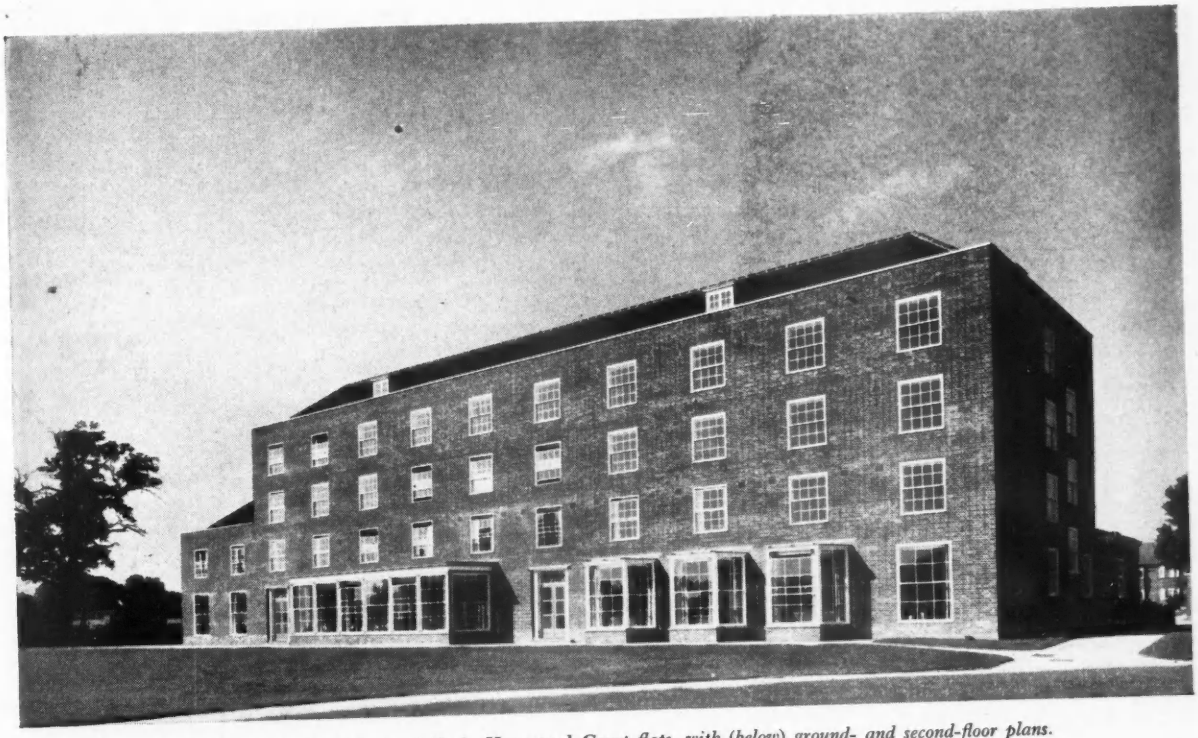
Templewood School. The general contractors were Messrs. C. Miskin and Sons. The sub-contractors were, steel frame, Hills (West Bromwich), Ltd.; roof blocks, Dow-Mac (Products), Ltd.; wall slabs, Orlit, Ltd.; central heating (warm air), Weatherfoil Heating Systems, Ltd.

Entrance front to the hotel block and (below) layout plan.

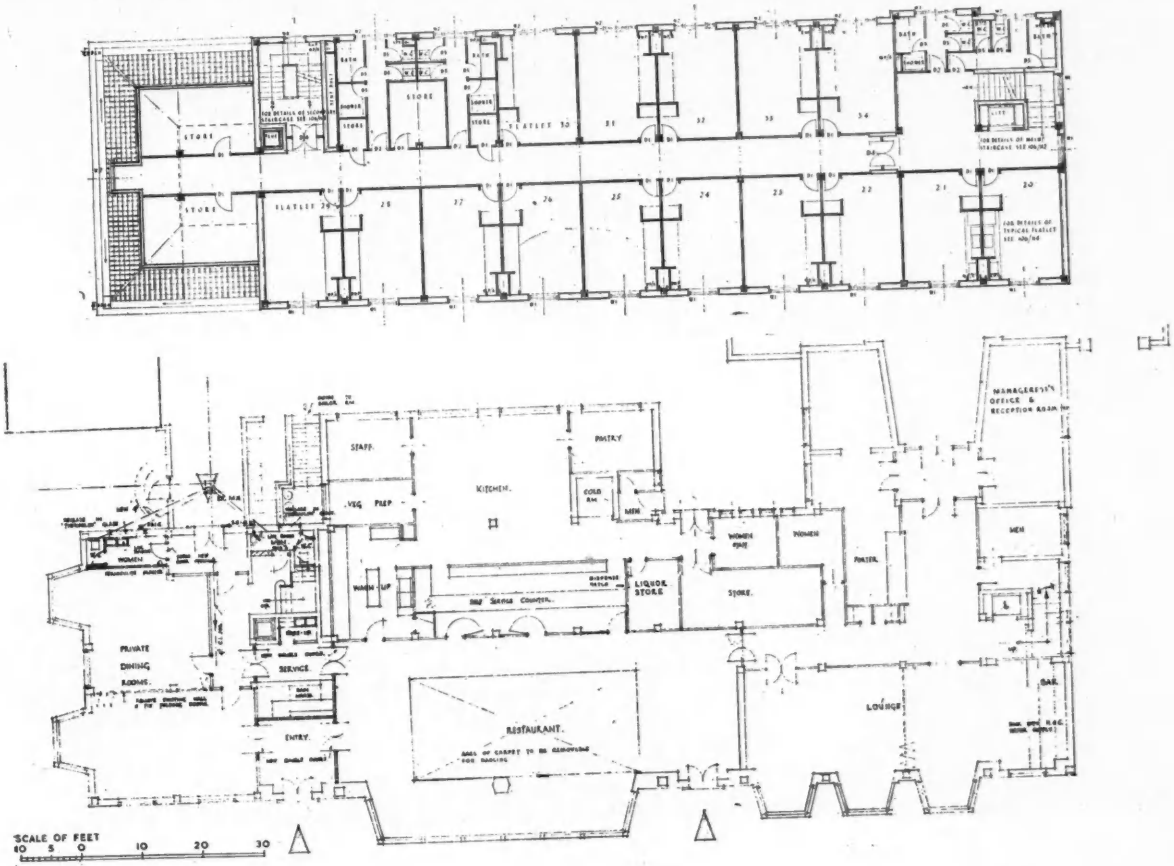
HOMESTEAD COURT FLATS, WELWYN GARDEN CITY

LOUIS DE SOISSONS, ARA, AND PARTNERS, ARCHITECTS



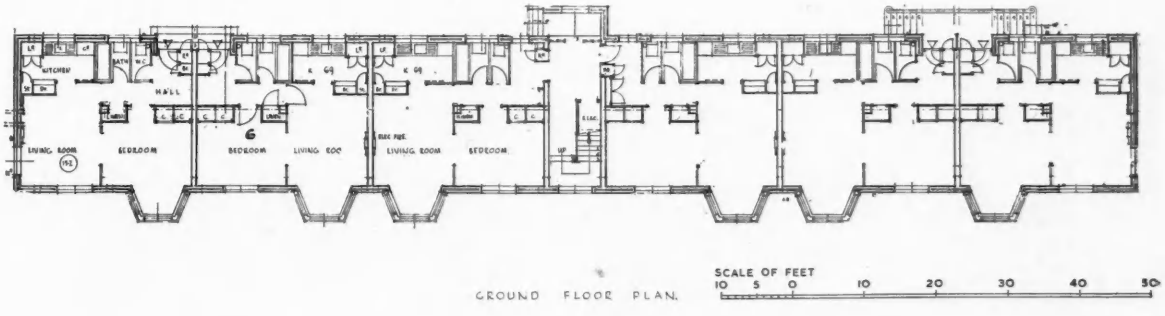


The south-east front of the hotel block, Homestead Court flats, with (below) ground- and second-floor plans.



Two views of the interior of the hotel block, showing (left) the restaurant and (below) the lounge looking towards the bar.

View of Homestead Court flats looking east with (left to right) hotel block and blocks "A," "B," and "C." Below : Plan of block "B." All the flats will be provided with hot water and central heating from a central boiler house, which will be one of the amenities of the scheme. Other amenities are the view over the playing fields to the north, which are to be a permanent feature, and the landscape gardening which is to be carried out within the precincts of the scheme itself.

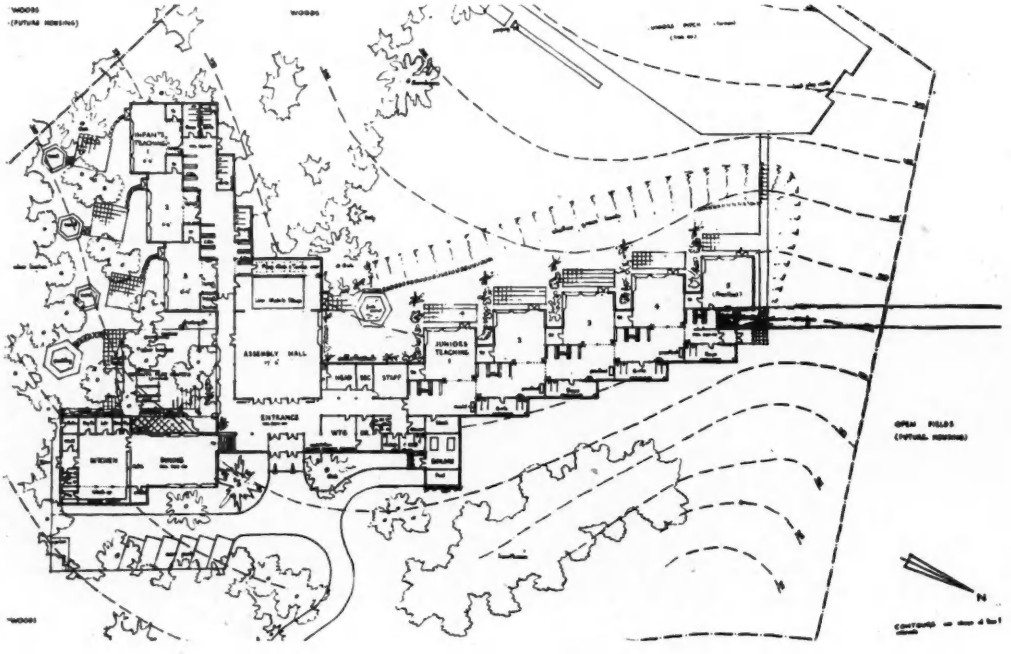


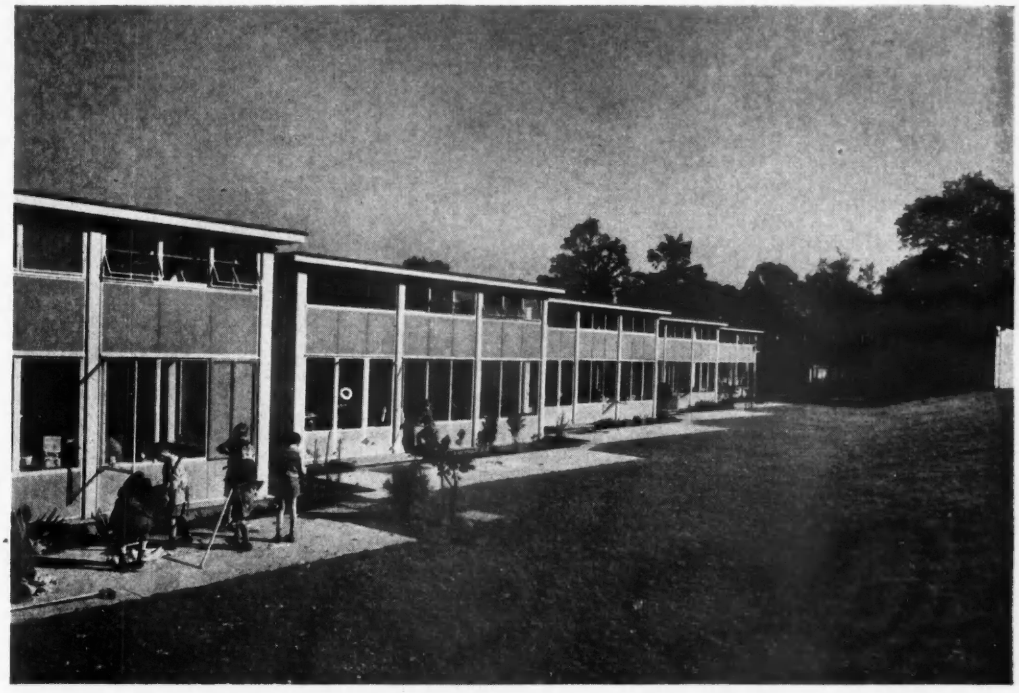
GROUND FLOOR PLAN.

HOMESTEAD COURT FLATS, WELWYN GARDEN CITY

LOUIS DE SOISSONS, ARA, AND PARTNERS, ARCHITECTS

Templewood Junior Mixed and Infants' School, Welwyn Garden City. Above : The infants' paddling pool, sand pit and terrace, with the assembly hall on the left and the dining hall on the right. Below : Layout of school. C. H. Aslin, C.B.E., F.R.I.B.A., Hertfordshire County Architect, and A. W. C. Barr, A.R.I.B.A., architect in charge.





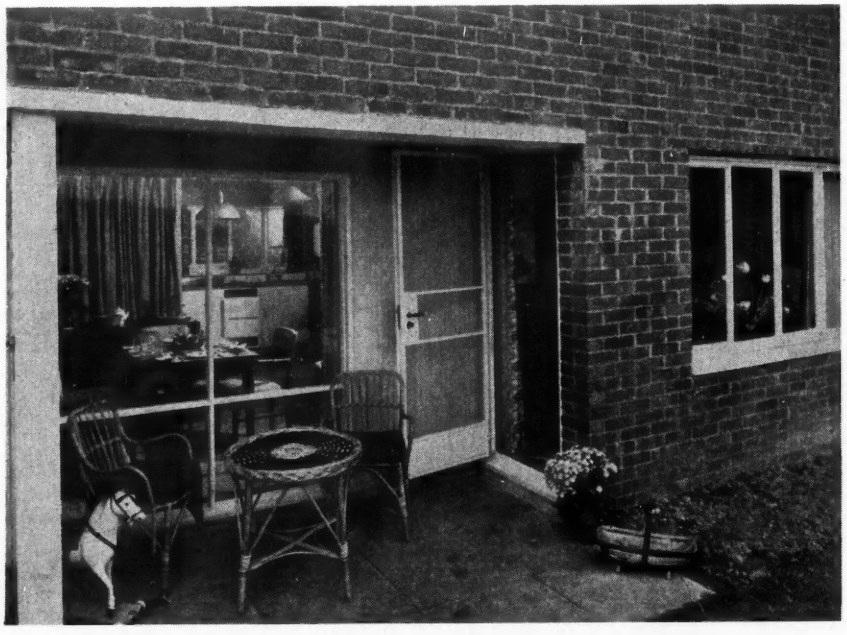
Templewood Junior Mixed and Infants' School. View of the junior classrooms, looking towards the assembly hall.

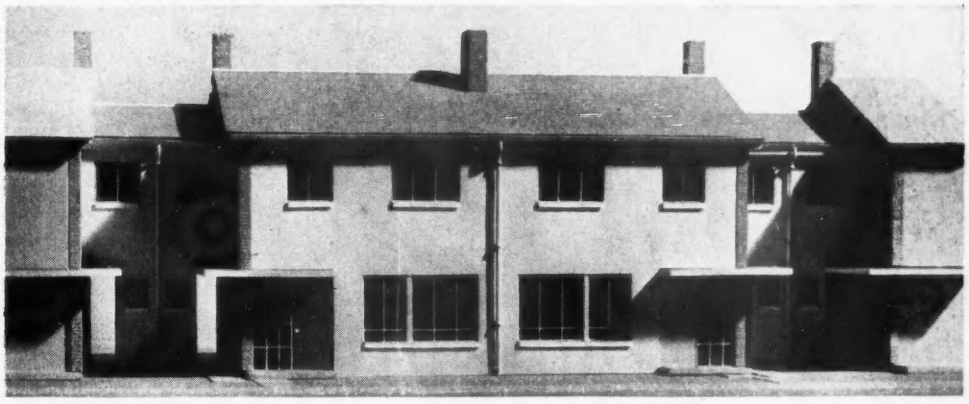
Monthly-tenancy type terrace housing in South Parkway, Welwyn Garden City. Louis de Soissons, A.R.A., and Partners, architects.

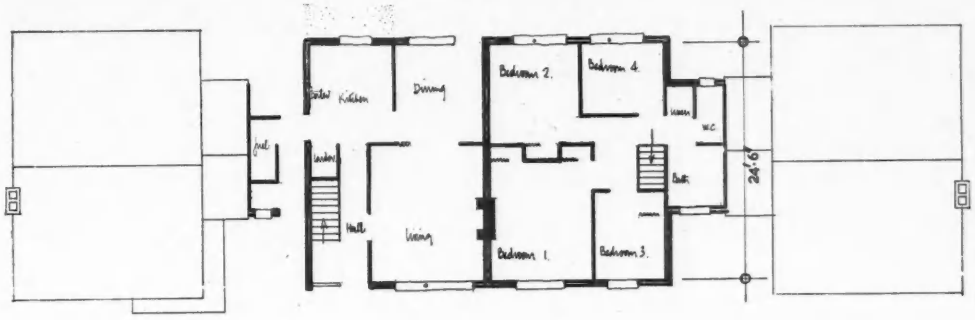
Type " W " houses at Roe Green. This view from the back or garden side shows how the tenants' privacy is preserved by staggering the layout of the houses. Below : Detail of loggia.

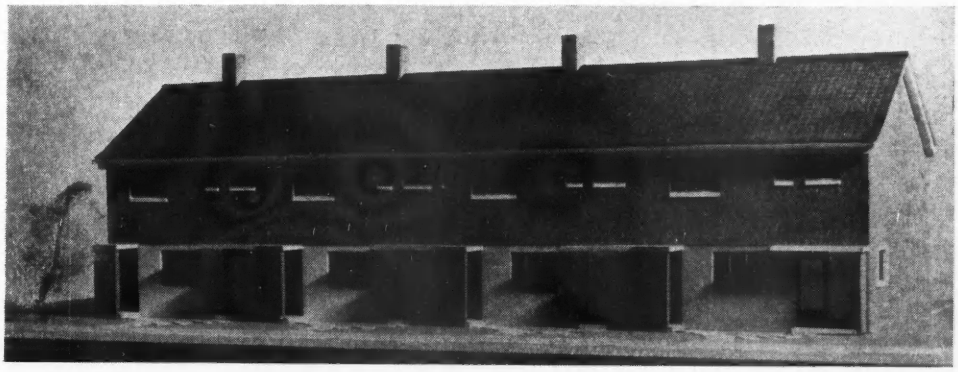
HOUSING AT ROE GREEN, HATFIELD NEW TOWN

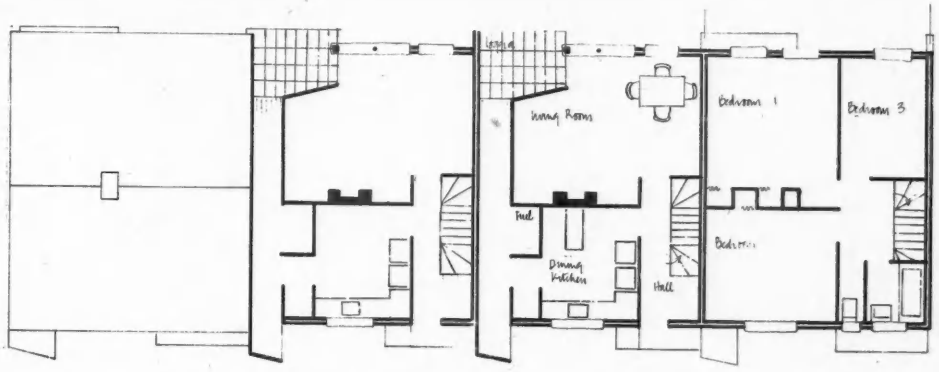
THE HON. LIONEL BRETT, MA, ARIBA, ARCHITECT



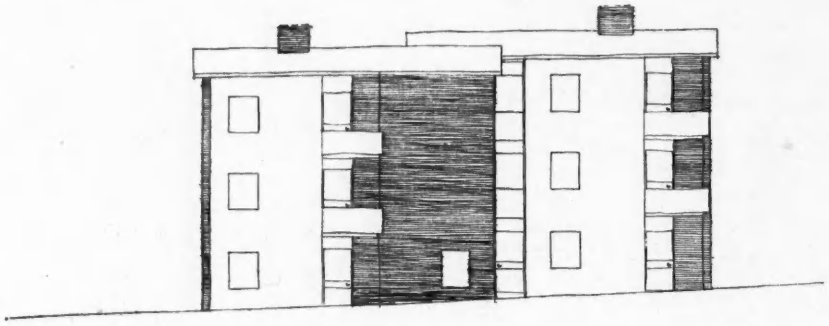




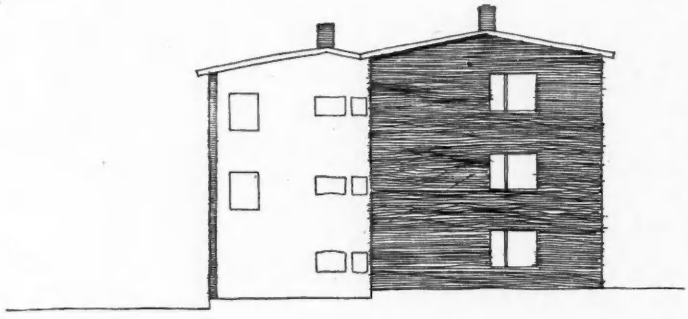




Housing at Roe Green, Hatfield. Top, plans and front elevation of type "A" four-bedroom "link" houses, and, below, plans and front elevation of type "N" terrace houses. Lionel Brett, M.A., A.R.I.B.A., architect.



WEST ELEVATION.



SOUTH ELEVATION

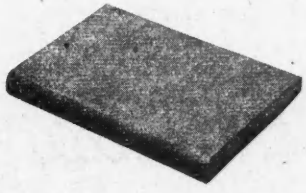
Plans and elevations of three-storey flats at Roe Green. Lionel Brett, M.A., A.R.I.B.A., architect.

PROGRESS ON THE NEW TOWNS. 4.—HATFIELD AND WELWYN GARDEN CITY

ALTRO NON-SLIP PRESTILE

Monumental Mason: S. T. Reeves, Englefield Green

for maintenance of stone and concrete stairs



Eliminates wear and danger of slipping. Full range of colours.

After 70 years the natural stone stairs at the Royal Holloway College, Egham, had become so worn that they were dangerous. To make them safe the existing treads were cut away and 9" x 4" x $\frac{3}{4}$" round nosed Altro Prestile bedded in. The back of the treads and landings were made good with grano in which Altro (aluminium oxide) grain was incorporated to increase the resistance to abrasion and to make them non-slip. For further particulars write to me for Bulletin No. 1.

Cecil Kalm

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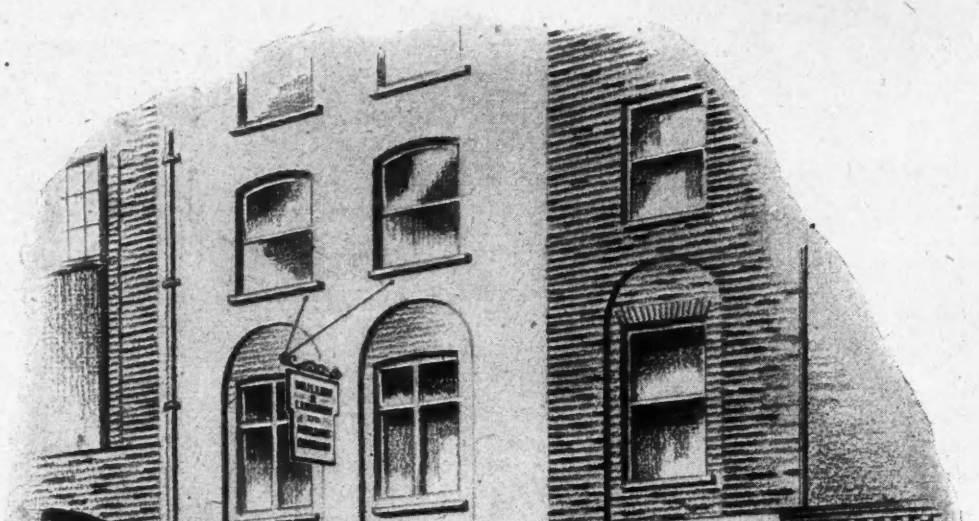

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CORRESPONDENCE

ARCHITECTURAL HOSPITAL MAINTENANCE

To the Editor of *The Builder*

SIR,—Under the above heading Messrs. Knighton and Evans, in a letter published in your issue of November 2 last, find fault with my references to the National Hospital Service in a recent address to the Institution of Engineers-in-Charge. A complete and accurate account of those references was published in *The Engineer* of October 19 to which they refer, and examination of it will show that scarcely any of the grounds which my critics advance for their complaints are to be found therein. I did not criticise "the present practice of hospital boards in putting an architect in charge of maintenance of hospital premises." Nor did my address "condemn the present arrangements for carrying out both engineering and building maintenance and new work," as they state. That statement is true as regards engineering only. My theme was not "architectural hospital maintenance," which I barely mentioned, but was the acts and omissions of the Ministry of Health and of regional hospital boards as one result of which several of those boards are, I said, "attempting to meet their engineering responsibilities by the appointment of assistant engineers in their architects' departments."

Messrs. Knighton and Evans accuse me of saying much that could be prejudcial to good relationship between the professions of architecture and engineering and of using a strident tone in criticism of architects. I do not think that I criticised architects at all. It is true that I mentioned limitations of the architectural profession in view of which architects are not qualified to have charge of engineering. If that is criticism of architects then I also criticised engineers, for I explicitly excluded architecture from any field of which I suggested that engineers should have charge.

My two critics quote accurately a passage in which I suggested that an engineer could make a better job of building maintenance—not of architecture—than an architect can make of engineering. An architect might disagree with me, but he could have no possible ground for grievance against the engineer who holds and expresses that opinion, to which I adhere. In the same passage I said that "if regional boards wished to combine and co-ordinate engineering and building functions in one department they would have been better advised to make the regional engineer the head of that department." This passage contains my only reference to anything that could be called "architectural hospital maintenance," and it will be seen that it is subject to the condition of a combination which I did not advocate. Messrs. Knighton and Evans take exception to this passage, neglecting its conditional character and imagining that it is opposed to their view that there is ample room in the hospital service for both regional architects and regional engineers; there is no such opposition. The position is not that I have intervened in a happy relation between architects and engineers throughout the service and upset it by suggesting that there is no room for the architects. The facts are that all fourteen regional boards have appointed regional architects, but only five of them have appointed regional engineers. I did not dispute the room for the architects; but I did maintain that there is not only room, but need, for regional engineers.

Your correspondents say that my discussion does not solve all their problems. Why should it? I addressed myself to one problem only, so far as they are concerned, and I offered the solution, which is that engineers and not architects should have charge of engineering. They wrongly accuse me of exalting the profession of engineering at the expense of architecture. At present the boot is on the other leg, but I do not suggest that regional boards should do anything merely for the purpose of advancing the engineering profession. It is in the interests of the hospital service and of the national purse that I maintain they should have engineers directly responsible to them for all engineering.

If Messrs. Knighton and Evans suggested that architects ought to have charge of engineering, then indeed there would be contention. From their own statements, however, I think I may claim their support; and they may find on reflection that there is no real or substantial difference between us.

ROBERT CHALMERS
[O.B.E., B.Sc., M.Inst.C.E.]
55, Dartmouth-court, S.E.10.

BRAVE NEW WORLD

To the Editor of *The Builder*

SIR,—Your readers will have read with appreciation in your columns [*The Builder*, October 26], if they were not fortunate enough to have already heard on the Third Programme, Mr. Moya's remarks on "Architecture in the New Towns." Mr. Moya's views represented a welcome breakaway from the rather uninspired picture of universal suburbanity usually put before us by town planners. The sub-title of the talk as you print it referred however to the creation of the "right kind of atmosphere" and, at the risk of being deemed captious, may I question whether the milk bar is yet universally accepted to be the desirable hub of social activity?

Mr. Moya may have spoken inadvertently but there is an ugly suspicion that new communities are to be made fields for experiment by social technicians, theorists and cranks of all kinds who will set out to provide for their inhabitants not such amenities as the inhabitants want but such as in the opinion of the authorities they should want.

What a picture of more than continental gaiety Mr. Moya spreads before us as, seated in our café, we see the waitress place before us after only half an hour a delicious cup of coffee extract and a dainty rock cake. Goodness! what gaiety, and my! what animation of the crowds strolling and chattering round the milk bar. See, they are standing on chairs to see the reigning beauty of the New Town pass by. They call her Mimi, and she has been walking out for two years with the assistant gas inspector: but alas! tragedy shades their romance for she is in the last stages of whooping cough. Look, the crowds part before a dancing band of primary school children led by their teacher. What a pity three of them have colds! Now the tobacconist is closed and Carmen, his assistant, joins in gipsy merriment round the football ground with the denizens of the local caravan park whose leader saunters towards us breathing sweet melody from a trombone. If these are to be the attractions of our New Towns, what charm for the tourist can have in future Paris, Naples or Old Seville?

North and south of the border the British, though not unanimous, have known quite clearly in the past the appropriate liquid refreshment for Englishmen and Scotsmen. Let us think twice before in the names of the great gods "Uniformity," "social engineering," "the progressive outlook," and what have you, we substitute a tepid alternative and hold ourselves out as a nation of—milksops.

D. C. MALLAM.

Artillery House,
Artillery-row, S.W.1.

AN ESTIMATORS' ASSOCIATION?

To the Editor of *The Builder*

SIR,—I have read with great interest the recent letters promoting an association to represent estimators. For some years this has been discussed among my fellow estimators. Quoting purely an impression gained from these discussions and those representing the directive side of the industry, I find that the large building organisations in London view the possibility of their responsible estimators having mutual connection with those in other firms in a similar capacity with some suspicion.

However, as in other walks of life, there are people who do and others who dabble, and since the estimator shares one of the greater responsibilities and forms a "hub" of the competitive side of the building organisation, I feel some standard should be set, if only to prevent abuse of the word "Estimator."

I am willing to co-operate with "Estimators" in forming such an association in order to formulate the basic principles and standards relevant to one of the most interesting subjects a man can take to.

A. REED.

17, Thornford-road, S.E.13.

To the Editor of *The Builder*

SIR,—May I associate myself with the plea issued by Mr. C. Loring Rees in *The Builder* of November 2, and echoed by "Estimator and Surveyor" of Birmingham, 1, in your issue dated November 9, for greater recognition of the estimating profession? It is true that certain Guilds and Faculties have as members many estimators amongst their measuring, land and unqualified quantity surveyors, and this fact would seem to stress the need for an independent institute or association for estimators and surveyors of considerable

experience who are associated with building and public works contractors of repute.

It would interest not only the directors of building companies but architects and quantity surveyors alike to have the knowledge that a "qualified" estimator and surveyor was associated with a particular contract, not only from the pricing angle but from that of supervision as well.

I cannot entirely agree that we belong to a "somewhat neglected" branch of the building industry as the professional side is, I am sure, very appreciative of our efforts. To raise the standards of our branch is essential, and this can only be done by means of a controlling body exercising its powers in a fair-minded yet reasonably strict way.

It would be of great value and interest to all concerned if we could manage to arrange a meeting to discuss the possibilities of an Institute.

J. C. C.

Sanderstead, Surrey.

To the Editor of *The Builder*

SIR,—With reference to the letter of "Estimator and Surveyor" in your issue of November 9, I am entirely in agreement that the estimating profession should have the same recognition as the other professions allied to the building industry.

For a number of years now I have discussed suggestions of this matter to persons coming under this category. An institute of this nature could be beneficial for arbitration on many items which at present form a deadlock between the quantity surveyor and builder.

To go into such items here would be too lengthy for this correspondence. In any case the institute would cater for the estimator and builder by whom he is employed. I suggest a meeting should definitely be arranged for persons interested in this direction, and would like anyone interested to correspond with me direct so that we can arrange a meeting to discuss this matter openly.

T. L. FARRELL.

"Ianholme," Parkside-avenue,
Cockermouth, Cumberland.

AN EXTENDED CORRESPONDENCE

To the Editor of *The Builder*

SIR,—I wrote to the Regional Manager of the War Damage Commission, Clifton House, on a professional matter on June 29, 1951. I have to-day (November 9) received a reply—a period of four months and ten days.

A. HESLOP ANTRUM
[Dipl.Arch., A.R.I.B.A.]

31, Addison-road, W.14.

BRICKLAYING PRACTICE

To the Editor of *The Builder*

SIR,—May I first of all correct an omission in my letter, which appears in your last issue? I had intended to suggest that Mr. Maslen should build the sample panel of 4½ in. wall *with bricks laid frogs upwards*, the object of course being that he could prove for himself later, by taking it down and attempting to clean the bricks, that he is wrong in his contention that bricks laid in this manner only adhere to their beds over approximately one-half of the bed area.

Now, may I comment on one or two of the points raised by Mr. Taylor and Mr. Roberson. I agree that too much tapping with the trowel is wasteful both in time and energy, but if the condition of the materials is right and the gauge to which the work is being erected reasonable, a good craftsman will not do much tapping. He will spread his bed correctly, and get his bricks down to the line by a combination of pressure and sliding action, with only a very occasional tap. Excessive tapping usually points to either poor craftsmanship, or inexperienced labourers, or maybe both.

I also agree that as far as possible any job should be made easy and tolerable, but to suggest that a sub-standard job should be accepted for this reason is, I think, carrying the matter too far. In my opinion it is only a matter of practical commonsense that, on load-bearing walls, not only bed joints but all joints should be filled solid. If an architect or engineer wishes to achieve a cellular effect, he will specify a cellular brick. If we accept the argument—that because a wall is more than adequate for its purpose, we can take liberties with the standard of workmanship—we shall very soon arrive at the point where the wall is in fact inadequate.

Regarding the bricks which have two frogs, Mr. Campbell provides the correct answer to this one in his letter in your last issue.

WM. WADSWORTH.

17, Rotheram-avenue,
Farley Hill, Luton.

To the Editor of *The Builder*

SIR,—In fairness to the bricklayer, it should be mentioned that all bricks delivered on a contract are not of the same thickness and in consequence in laying they exceed the gauge; i.e. four courses to the foot, although the bricklayer has laid three courses with frogs upwards. He will sometimes select bricks that are thinner and lay them frog downwards to get a thin joint and to keep within the four courses to the foot. This often happens on large jobs and I suggest the best method for solidarity is to fill both frogs with mortar. The same applies when laying a brick with the frog downwards. Here the bricklayer should fill the frog before he lays the brick.

G. W. HARRIS, Hon.F.I.C.W.

43, Leopold-road, Willesden, N.W.10

To the Editor of *The Builder*

SIR,—In reply to Mr. J. Roberts' letter in your issue of October 26, I offer the following observations.

The purposes of a frog in a brick are twofold; to reduce the weight of the brick and to form a key for the mortar.

Whether the bricks are laid with the frog uppermost or downwards has no effect on the ultimate strength of the wall provided the frog gets filled with mortar. It is fairly obvious that this is easier to do, and more likely to be done, if the frog is uppermost.

If the frog is downwards, no one making an inspection is able to see whether, in fact, the frogs are filled with mortar.

Mr. Roberts would be well advised to insist on bricks being laid with the frogs uppermost unless his local building contractor can give him a more convincing reason for doing otherwise than that less mortar is required.

F. HALESWORTH
[A.I.A.S., A.R.San.I.]

36, Elm Grove-lane,
Norwich.

To the Editor of *The Builder*

SIR,—I have been casually interested in this everlasting argument about "frogs" in the building industry. The question that comes to my mind is—how do all the experts (who have been discussing this matter in *The Builder*) deal with bricks that have a frog both bottom and top, if it could be definitely stated that there is a bottom and top of a brick? For their purpose of specifying sound construction do they say the bricks should be built on edge?

I am certain that some of the finest buildings over the length and breadth of the country are built frog downwards, when there is only one frog, and I know some of the finest architects, as well as craftsmen bricklayers, who have agreed with it. Well done, it is sound, economic and speedier, and there is no question that these buildings will last as long as others built with the frog upwards.

If it is the intention of the country to bring down the cost of houses and to build them quicker, why continue this age-long controversy?

ROBERT G. TARRAN.

Dorran Works, Perth.

*** This seems a good note on which to close this discussion. Our thanks are due to the correspondents who have taken part, including many whose letters have not been published through space consideration.—ED.

PLANNING PERMISSION INFRINGEMENT

Roof Tiles the Wrong Colour

MR. G. BRYANT, a building contractor, of Penyfai, Bridgend, Glamorganshire, who used red tiles on the roofs of four bungalows in the Penybont R.D.C.'s area, appeared before the council to give his reason why proceedings should not be taken against him for infringement of local planning permission.

MR. BRYANT told the council that as it took him 18 months from the time permission was given until the time he was actually able to begin building the bungalows, he had overlooked the clause relating to the colour of tiles.

The chairman, MR. CYRIL BEALE, told Bryant that the council regarded his action as a serious one, and said: "These rules are not made to be broken."

MR. BRYANT replied that it would cost £300 to replace the tiles with brown or grey ones.

It was decided that no action should be taken against Mr. Bryant other than a severe reprimand, and that the matter should be placed before the planning committee for them to recommend to the County Council that the order insisting upon brown or grey tiles for houses in Penyfai be cancelled.

TRIBUNAL OF APPEAL

Opposition to L.C.C.'s Proposed Housing at Wimbledon

AN appeal by Mr. George Rollason, owner of No. 15, Victoria-drive, S.W.19, against the height and siting of one of four eleven-storey vertical "point" blocks of flats which the London County Council propose to erect, together with a number of maisonettes, on a 28-acre site bounded on the east by Princes Way, Wimbledon, was heard on November 9 before the Tribunal of Appeal (President: Mr. William Hanbury Aggs, M.A., LL.M.) at the County Hall, Westminster, S.W.1.

The appeal was brought under Section 52(2) of the London Building Act, the relevant section of which provides that, in circumstances applicable to this particular case, no building shall be erected to a height of more than 80 feet unless "consent" has been granted by the administering authority.

During the course of the hearing, it was stated (1) that the proposed height of each of the four "point" blocks was 98 feet from ground to parapet and surmounted by a lift equipment and tank chamber bringing the overall height to 111 ft. 1½ in.; (2) the block to which objection was taken by the appellant was 46 ft. from the boundary fence of the garden of 15, Victoria Drive and 130 ft. from the rear wall of the house; (3) a "consent" under Section 51 of the London Building Act to allow construction to a height in excess of 80 ft. was granted by the L.C.C., in response to an application made by the appropriate department of that authority in June, 1951.

Case for Appellant

In his opening submission for the appellant, MR. W. SCRIVENS said that the Council's proposals would most seriously affect the amenities and value of his client's property. The garden, which was now a pleasant island of seclusion screened by a belt of trees 25 ft. to 40 ft. in height at its boundary with the Council's site, would completely lose the privacy which it at present enjoyed, and the principal windows of the house would at all times be overlooked from those windows of the proposed flats which were above the level of the trees.

It was no part of his case to say whether these eleven-storey buildings should or should not be built, but in view of the skill and experience which the London County Council could command, and with the room for manœuvre which this site allowed, he challenged the Council to say that it could not have planned the development of this estate in such a way that these immensely tall buildings were sited somewhere near the centre of the site where they would cause little or no injury to adjoining owners.

CHAIRMAN:—The peculiarity of this case is that the L.C.C. is both the builder and the "consenting" authority. That is not a matter which troubles the Tribunal except that we must be careful to consider how far our jurisdiction carries us. It would seem that the only thing which the appellant can require from us is the withdrawal of consent to the erection of a building above a height of 80 ft. The question whether the building should be erected at all in the position proposed, and those directed towards its character and style, are irrelevant to this particular issue. The grievance with which the Tribunal is concerned is controlled by the matters of light and air and the extent to which they are affected by the excess height above 80 ft.

MR. W. E. BULL, F.R.I.C.S., F.A.I., a partner in the firm of Vigers and Co., gave evidence on behalf of the appellant and said that No. 15, Victoria-drive, was a modern house with a garden area of about one acre. Its principal rooms faced directly towards the site of the proposed flats, and almost every part of the property would be overlooked. In his opinion, the present value of No. 15 was £12,000 to £12,500, and he considered that after the proposed flats had been erected it would not sell for more than about £7,500.

In cross-examination by Mr. Derek Walker-Smith, for the respondent authority, MR. BULL said he had not attempted to assess by how much less the value of the appellant's house would be reduced if the flats were restricted to a height of 80 ft. The higher the building, he said, the greater would be the damage and that damage would vary from a maximum of about £5,000 down to nothing if the proposed building was kept below the height of the trees on the boundary of the two sites.

MR. WALKER-SMITH:—Is the appellant aggrieved because the flats are to be over 80-ft. in height, or is he aggrieved because they will be there at all?—That is for the appellant to say. He is aggrieved by this particular building being erected on the particular site proposed.

MR. WALKER-SMITH:—You would agree that if the proposed flats were so constructed that they rose vertically to a height of 80 ft. plus two storeys enclosed in a sloping roof, as could have been done without the necessity of any consent under the London Building Act, Mr. Rollason would have had no right of appeal under this Act?—Yes, that is so.

In reply to a further question the witness said that, although he had not made precise calculations, the construction of a building of the height proposed would be bound to cast a shadow over quite a large part of the garden of No. 15.

Sir Patrick Abercrombie's Evidence

SIR PATRICK ABERCROMBIE also gave evidence on behalf of the appellant and expressed the view that, looking at the 28 acres as a whole, the general conception of the proposed development was in accordance with the ideas promulgated in the County of London plan, of which he was co-author. The decision to erect a rather high proportion of tall buildings was presumably arrived at in order to preserve the existing trees, which were very fine, and the remains of the original gardens. If that was so the Council's decision was justified on those grounds alone. Where one had room to manoeuvre, however, as was possible here, the natural thing to do would be to put the tallest buildings in the middle of the site where they would do the least damage to the amenities of neighbouring property and not to spread them around the circumference of the site in the way the Council at present proposed to do. In that respect, therefore, the Council's proposed layout was in flat contradiction with what he and his co-author had in mind when they drafted the County of London plan.

In cross-examination, SIR PATRICK agreed that this was not a planning inquiry and that the only question with which the Tribunal was concerned was whether the consent to a building of more than 80 ft. in height should have been granted.

MR. WALKER-SMITH:—Does not the present layout succeed in preserving the amenities of the site?—Yes, but an alternative arrangement could have been equally successful and would have avoided the unfortunate results which will now occur unless this appeal is allowed. I think it is at least arguable whether it would not have been better to have left this particular corner of the site free of all buildings in view of the rockery amentities which exist there.

The construction of these lofty blocks of flats, continued Sir Patrick, constituted an entirely new idea in suburban development and should be carried out with the greatest care. The proposed building would inevitably deprive Mr. Rollason's house of some of its light and increase the area of shade in the garden.

In reply to the chairman, Sir Patrick said that if the flats were reduced to ten storeys and the height to 80 ft. the loss of light and increase of shade would be a little less.

This concluded the evidence for the appellant.

The L.C.C.'s Evidence

MR. H. T. WOOLCOTT, an assistant valuer in the Valuation Department of the London County Council, said he had studied the photographs of No. 15, Victoria-drive, and thought the property would fetch from £10,500 to £11,500 in the open market.

In cross-examination he said it was not always easy to pinpoint the cause of a deprivation in value to any one thing. A number of imponderables had always to be taken into account. However, he thought some diminution of light to the appellant's property would result from the council's scheme and that its value would be reduced to the extent of something like £1,500 to £2,000. That figure applied irrespective of whether the flats were 80 ft. or 111 ft. in height.

MR. DOUGLAS HOLLAND, a principal assistant in the Architect's Department of the L.C.C., said that, in considering the application for a consent under the London Building Act, account was taken of the fact that there was a distance of 46 ft. between the proposed building and the boundary of No. 15, Victoria-drive, and as 46 ft. was comparable to the width of a normal London street, it was considered that it would be unreasonable to restrict the building to a height of 80 ft., as required by Section 51. Consent was therefore granted on August 13 of this year.

The witness emphasised that the application, which was made on June 5, received precisely the same consideration as would have been given to an application by a private developer.

Further evidence was given by MR. HERBERT G. GILLETT, A.R.I.B.A., also a principal assistant in the Architect's Department of the L.C.C.

This completed the case for the London County Council, and the Tribunal reserved its decision pending an inspection of the property.

"Builder" Prizes at Bartlett School

The Builder prizes for measured drawings at the Bartlett School of Architecture, University College, London, have been awarded as follows:—

Senior Prize: R. Topham. Highly Commended: H. R. Brady. *Junior Prize:* P. C. Sugar. Highly Commended: D. P. Bell and A. L. Dick.

S.E. SOCIETY OF ARCHITECTS

Annual Students' Competitions

THE faint aura of good intentions which tends to cling lugubriously to student competitions was wafted away this year in the air of Brighton, on the occasion of the South-Eastern Society of Architects' prize distribution and students' day, writes a correspondent.

As befits a place whose pubs are sets discarded from Citizen Kane the atmosphere of the occasion was charged with possibilities. A high-minded audience of close on 150 gathered to hear a criticism of the year's work in the banqueting room of the Pavilion, but somehow the spirit of those ancient warhorses Sarah Bunn and Martha Gunn had got abroad. Seriousness as a consequence was hard put to it to contend with the antics of the scene-shifters.

The proceedings were in three parts. Throughout the day an indefatigable jury toiled in an annexe to "The Prince of Wales' Bedroom" to assess railway stations and bathing pools and the rival claims of a hundred excellent sketches. At 3.30 a horde of students bearing the later-to-be-contested pennants of their rival schools arrived by coach and ancient car, on foot and by cycle, from all over the south-eastern area to appraise the results. At 5 o'clock tea was served under the palm-leaved dome below and the slaves who before had laboured to make screens ready in the conference room above now set to work anew to lug them down the cast-iron "bamboo" stairs. Small wonder they were hardly ready when the proceedings opened or that, as the latter ran on, they would from time to time in Shakespearian fashion ring the changes, turning the battlements of Elsinore into a graveyard and measured drawings into testimonies of study. Enlivened in this wise the third and most important part of the affair drew all too soon to its conclusion.

Mr. Peter Shepheard, B.Arch.(Lvpl.), A.R.I.B.A., A.M.T.P.I., gave the criticism—one worthy to stand in line with those others by Hugh Casson and Edward Mills—easy, yet searching; kindly, but full of wise caution and counsel. He spoke of the need for speed in execution, of the importance of making a drawing a client can understand, of sketching always and not only for show, of the value of measured drawing in the formation of an understanding of what lines on paper really do and may stand for and, when he replied to Mr. F. E. Green's vote of thanks, of the bogey of public and private practice.

To set these two in opposition, he said, was a baneful thing, liable to split the profession. For the student the heart of the matter lay not in the distinction between public and private practice but between different types of work and different sizes of office. In private practice he might hope to engage in work of an experimental kind; in the Government office he would meet with the larger problems of vast enterprises perhaps more cautiously conceived. In the small office, or in one of the larger sort which practised group working, lay the chance for the man whose ambition it was to take a leading part; in the large one the opportunity was available for those who are happiest when they are working as part of a machine.

The president, Mr. Cecil Burns, F.R.I.B.A., presented the prizes, a witness in himself to his own expressed belief that architecture is one of the happiest professions.

The hon. secretary proposed a vote of thanks; the chairman, Mr. Edgar Bunce, F.R.I.B.A., rounded all off neatly and the audience dispersed into the light-bedecked Steyne to where Sir William Chantrey's supercilious Victoria keeps company with the ubiquitous Regent in his later robes as king, and both stand watch beside the most fantastic building the English ever have or ever will produce.

The winners of the competitions were:—

Senior design, "A Country Railway Station"; 1, Ivor G. Berresford, Canterbury; 2, Guy M. Wickens, Canterbury.

Junior design, "A Private Bathing Pool": 1, D. Evans, Brighton; 2, Ian T. Liddell, Canterbury.

Senior measured drawing, consolation prize: John B. Croxford, Rochester.

Junior measured drawing: 1, A. J. Ickeringill, Brighton; 2, E. Belchambers, Canterbury.

Best intermediate testimonies: R. L. Guy, Brighton.

Best final testimony: Michael J. Blee, Brighton.

Sketches: 1, T. J. Rendle, Brighton; 2, C. C. Neville, Canterbury.

OBITUARY

W. A. Forsyth, F.R.I.B.A.

As briefly reported in our last issue, we regret to record the death, on November 5, of Mr. W. A. Forsyth, F.R.I.B.A., senior partner of Messrs. W. A. Forsyth and Partners of Nottingham-place, London. He had been in practice for over 50 years and gained a reputation for his work at many of the Public Schools, notably Repton, Shrewsbury, Eton College and Oundle. He was an authority on church restoration and repair and the care and safety of Salisbury Cathedral was one of his special charges. During the repair of the Cathedral's famous spire this year he climbed many times to the topmost stage to supervise the work. For many years he was consulting architect to St. George's Chapel, Windsor.

His work at the Queen's University, Belfast, and the University College of Hull, is also well known. He served on the executive committee and council of the National Trust for a considerable period and was also a prominent member of the Society for the Protection of Ancient Buildings and The Central Council for the Care of Churches. His scholarship and kindly disposition had endeared him to a wide circle of friends who will greatly regret his passing.

The practice will be carried on by his partners, Messrs. L. R. Foreman, A.R.I.B.A., and E. C. Butler, L.R.I.B.A.

Dr. F. C. Eeles, O.B.E., D.Litt., writes: Mr. W. A. Forsyth was one of the most experienced architects in the country for the repair of ancient buildings. He had exceptional knowledge of spires, and for many years was in charge of that of Salisbury Cathedral, perhaps the most delicate and touchy structure in the country, where extensive repairs have only just been completed. He had many other important buildings under his care, including Rochester Cathedral and St. George's Chapel, Windsor.

Mr. Forsyth was one of the first members of the Central Council for the Care of Churches, and he devoted much time and thought to the work of this body, particularly in its earlier stages. He was the architect of the new cathedral in Blackburn, where, owing to the war, so far only the crossing and the underground vestries have been added to a fine nave of the period just before the Gothic revival. Many valuable ancient churches were repaired by him, notably the remarkable little nuns' church of Davington Priory, near Faversham, Kent; he was responsible for the cleaning and adaptation of the crypt of St. Martin-in-the-Fields; he restored the Queen Anne tower of Kingston-on-Thames church; and he rescued from impending ruin the fine but long-neglected 14th-century church of Sundon, Bedfordshire.

By his extensive knowledge of methods of repair, Mr. Forsyth saved many an ancient roof and bell cage from destruction. He removed the mass of iron struts that had injured the appearance and rusted the stonework of the beautiful tower of Bishop's Lydeard Church, near Taunton, and he carried out a lot of repairs to Toddington Church in Bedfordshire. The unspoiled 18th-century interior of Molland Church, North Devon, once threatened by a leaning arcade, was taken in hand by him and has now been stabilised and carefully repaired.

W. H. Gaunt, C.B.E.

We regret to announce the death of Mr. Walter Henry Gaunt, C.B.E., J.P., F.L.A.S., M.T.P.I., M.Inst.T., M.I.Mech.E., at the age of 77. Mr. Gaunt was a pioneer in the garden city movement, and was concerned with the development of Trafford Park Estates, Ltd., and of the First Garden City, Letchworth, and in 1946 he was a member of Lord Reith's Committee on New Towns. He was a member of the Council of the Town Planning Institute, and an ex-president of the National Housing and Town Planning Council.

J. T. Middleton, W.S.

We regret to record the death of Mr. J. T. Middleton, Writer to the Signet, Secretary of the Royal Incorporation of Architects in Scotland. Mr. Middleton had been actively engaged in preparation for the British Architects' Conference of June next two days before his death, which occurred on November 4; his keen interest in and thorough grasp of the Incorporation's affairs will be greatly missed. Mr. Middleton was also Secretary to the Council for the Preservation of Rural Scotland.

J. I. P. Jones, A.R.I.B.A.

We regret to announce the death, on November 5, of Mr. John Ivor Price Jones, A.R.I.B.A., who was for some time honorary secretary to the South Wales Institute of Architects. In conjunction with Sir Percy Thomas, O.B.E., F.R.I.B.A., he designed the Cardiff Technical College; the Y.M.C.A. building, Merthyr Tydfil; the Fire Station, Cardiff; and the Y.M.C.A. building at Pontypridd.

J. E. Osborne, L.R.I.B.A., A.M.T.P.I.

The death has occurred at Hungerford, Berks, of Mr. John Eric Osborne, L.R.I.B.A., A.M.T.P.I. He was 49.

Building Teachers' Conference

"WHAT the Building Industry expects from the Technical Colleges" has been chosen as the subject to be discussed at the next meeting of the Building Teachers' Conference, to be held at the N.F.B.T.E., 82, New Cavendish-street, W.1, on Saturday, November 17. The speakers chosen to open the discussion, who will be introduced by the Conference president, Mr. T. E. Scott, C.B.E., F.R.I.B.A., are Messrs. F. M. Sleeman, C.B.E., F.I.O.B.; W. A. Yeomans, vice-president, L.M.B.A.; and E. L. Jones, M.B.E., secretary, London Region, N.F.B.T.O.

The Conference's annual meeting will be held in the afternoon.

ACCOUNTING AND COSTING FOR SMALL BUILDERS

A New Publication

THE National Federation of Building Trades Employers, with the aim of increasing the efficiency of the building industry, has brought together the professional knowledge of a firm of chartered accountants and the practical experience of builders to produce a book, "Accounting and Costing Systems for Small and Medium-sized Builders."

Speaking in London last week, MR. STEPHEN HUDSON, president of the N.F.B.T.E., said it was hoped that this book would not only encourage those who had not adopted a costing system to do so at an early date, but would also help others to make improvements in their present systems. The book should also be of considerable assistance to students who intended to enter the industry on the administrative or accounting side. The Building Working Party, in its report published last year, had expressed the view that "an adequate costing system is an essential factor in management, both in promoting efficiency in the utilisation of labour, materials and plant, and in controlling overhead expenditure," a view which was heartily endorsed by the federation.

"The building industry comprises firms of many different sizes and types, and it is not possible to lay down a system that would be suitable for every firm," Mr. Hudson continued. "The book is therefore in two main parts. Part I, which is in the nature of a preparatory stage, describes a simple system of book-keeping and job costing. The purpose of this is to encourage the small firm, which at the moment keeps few or no records, either accounting or costing, to commence records or improve those already in existence. Part II describes a complete costing system and is intended more particularly for medium-sized firms. Many firms, having maintained simple elementary records, may eventually find more detailed information to be of value. By extending the records it should be possible to get details of the various elements of cost and gradually progress to the complete costing system which Part II of the book fully describes."

The book, a copy of which is being sent to each member of the National Federation, is pubished by *The Builder, Ltd.*, at 5s. net (5s. 6d. post free).

The Book Reviewed

THE building industry has been slow, so far as concerns the preponderance of its membership represented by the small- and medium-sized firms, to accept cost accountancy as a necessary concomitant to its operational efficiency, much less to consider it indispensable to sound management. Overall contract costs have, of course, always been kept in some shape or form, such as would show, by and large, whether a job was settled at a profit or loss, but until recent years the recording of unit, group or trade costings was a refinement only put into operation by the few.

The reasons for this disinclination towards detail costing probably lie deep, for building was a trade—or rather an assemblage of trades—long before the factory became the hub of general industrial activity. Building was never "industrial" in that sense. Men have *gone out* to build for countless generations. Only in relatively recent times have they *come in* to factory life and been conditioned to its prescriptions in the division of labour. The new techniques of industrial processes, the co-operation of man and machine, the compulsion of the belt conveyor—these have called for the timing of operations so that hand and machine may work in harmony and with modular frequency. Thus arrived those others whom Adam Smith referred to as "philosophers or men of speculation, whose trade is not to do anything, but to observe everything," who later achieved the title of cost accountants.

The building industry, for a long time, kept shy of these new "men of speculation," although by a curious evolution within itself it produced an off-shoot, a like-minded group of men who became known as quantity surveyors; through them there developed a technique no less incisive, in many ways indeed more elaborate, than cost accounting. Their work was, in a sense, reciprocal to that of the cost accountants and it is strange that the two have taken so long to meet and equate in building industry organisation, for the bill of quantities would seem to be the perfect anticipation for cost accountancy in building work.

Controlling Expenditure

The 1950 Report of the Working Party on Building Operations devoted a chapter to costing in which it was affirmed that the working party considered "an adequate costing system to be an essential factor in management, both in promoting efficiency in the utilisation of labour, materials and plant, and in controlling overhead expenditure." It was further held that "an effective costing system can be of great assistance to the contractor by providing information upon which he can base his tendering."

It may be recalled that the working party commissioned a firm of accountants who investigated, with the co-operation of the National Federation of Building Trades Employers, the costing systems of a representative cross-section of medium and large firms in the industry: the report of these accountants was published as an appendix to the working party report. This supplementary report very probably suffered the neglect which, in a busy world, is the fate of such appendices, especially since this one, even in an abridged form, ran into 15 pages. It was indeed worthy of separate publication, not only on account of the range of its inquiry and the depth of its scrutiny, but also because it was a model exposition in its own sphere.

The accountants' findings were that costing within the industry was in general wanting at many crucial points and displayed "a lack of uniformity of treatment in regard to various elements of cost in the breakdown of total contract costs." One of their recommendations (adopted in the working party report) was that "the employers' federations could greatly assist the industry by laying down the principles of a model costing system and providing model forms upon which the cost information could be compiled." It was allowed that within such principles, individual firms could frame their own costing systems; the benefits of standardisation would leave room for freedom in their adaptation to individual requirements.

This recommendation has now been implemented in the publication here reviewed. In its style and matter we notice a concurrency with the above-noticed appendix to the working party report such as would lead one to surmise that this work is by the same hands. The book is in two parts, the first dealing with a simple system of book-keeping and job-costing for small building firms, and the second giving an exposition of the principles of a costing system for use by medium-sized firms in the building industry. The work contains 38 model forms variously applicable to accountancy and costing, or both; for it is the opinion of the authors that for a costing system to be adequate it should either form part of or be capable of being reconciled with the financial books of the firm.

A Useful Introduction

This little volume will be welcomed as an introduction to costing. It follows on the heels of another, recently reviewed in these columns, "Price Build-up Today," with which it could have much in common. We must remember, however, that if we are preaching to the unconverted we have first to overcome prejudice, and there is a load of prejudice that war-time conditions imposed, and post-war conditions have reinforced, in the matter of paper work. To appeal to the man who does not as yet regard costing as something vital, we have got to get down to him on his own ground and show him where costing *pays*. If this book is open to criticism it may be that it is a little too redolent of accountancy for its own sake to attract the practical man, to whom some of the model forms may not appear significant, and others—for example, Nos. 24 to 26—may appear trivial. The work has indeed the substance, but it lacks something in the flavour.

Cost accountancy in the building industry must centre on and hinge round the bill of quantities. The authors of this book acknowledge this, and the working party underlined their opinion that bills of quantities should be priced in such a manner as to make them effective for costing purposes. This is ground on which the practical contractor will feel at home, for he too understands "the quantities." There is no evidence that a quantity surveyor was consulted in the preparation of this work—rather is there negative indication to the contrary. There would seem to be a call for the matter introduced in this book to be built upon in a joint exposition by accountant, quantity surveyor and builders' estimator—the first to pilot the course through correct financial waters; the second to relate theory with practice and to balance the impersonal against the factual; and the third to supply the *motive* without which the other two might miss the tide. It is important that the salt should not lose its savour.

S. W. H.

The Foreman and Productivity

A pamphlet on this subject, by Sir Percy H. Mills, K.B.E., dealing with the important part the foreman can play in increasing factory production, has been issued by the Institute of Industrial Supervisors, from Bank-chambers, 47, Temple-row, Birmingham, 2.

Productivity Report Summary

A simplified summary of the Grey Ironfounders' Productivity Report has been issued by the Council of Ironfoundry Associations for distribution among operatives throughout the ironfounding industry. The purpose of the summary is to publicise still further the findings and conclusions of the inquiry on productivity in the U.S.A.

THE BUILDING EXHIBITION

Some Special Displays

THE following is the second article on the Building Exhibition which covers the principal exhibits of the various Government departments and organisations connected with the building industry, together with references to trade exhibits additional to those given in our last issue.

National Federation of Building Trades Employers

THAT the building industry is primarily a service to the public is made abundantly clear by a pictorial screen on this stand which stretches across the greater part of the front elevation. The screen carries a series of hand-painted sketches expressing in simple form the impact of the building industry on the major aspects of our daily lives: education, housing, health services, sport, industry, commerce and travel. One of the most important features of the National Federation's work is the consultative and advisory machinery which it has evolved with Government and Contracting Departments and with the professional and industrial bodies associated with the building industry. This machinery is illustrated on a large-scale display panel by a diagram showing the organisation which has been built up over the years. An adjoining map of England and Wales shows the headquarters' locations of each of the ten regional Federations affiliated to the National Federation and of the local associations. This is the first time such a map has been attempted. A second map, entitled "Britain Builds for the World," shows the places where the skill and organising ability of British builders are serving overseas clients and customers. Apart from a comprehensive display of the publications and literature issued from time to time, the stand contains several other display screens dealing with such matters as the work of the private enterprise house builder, building apprenticeship and the valuable contribution made to the general economy by the maintenance builder. [Stands Nos. 482, 4, and 6, Gallery.]

Ministry of Housing and Local Government

THE Ministry of Housing and Local Government has two stands, each of which illustrates a theme. The housing stand has the device, "Skilful Design Lowers Costs," and the planning stand, "New Towns—New Ways of Life."

Local authorities were advised in April of this year of ways in which housebuilding costs could be reduced without lowering the essential standards of room space which were recommended in the Housing Manual, 1949. The Minister took the view that it would be wrong to approach the problem by fixing a maximum cost for each house and then forcing down the standards of accommodation and amenity to meet it. On the other hand it is possible, by skilful planning, to maintain the essential standards of room sizes and aggregate living space within a smaller total superficial area than 900 feet for a three-bedroom house for five persons, or 750 feet for a two-bedroom house for four persons. The models and plans on the housing stand show some of the ways in which these savings can be effected; they are merely examples, for there are many alternative methods by which the basic ideas can be developed. Some of these designs are illustrated on pages 653-6.

Another section of the housing stand is devoted to the housing needs of old people, single workers, students, apprentices, disabled persons, district nurses, and midwives.

The Planning Stand

The building of new towns and the expansion of existing towns are parallel methods of dealing with the congestion and discomforts of living, for many, in our great cities and industrial areas. The first part of the planning stand shows where the concentrations of population are greatest, and then takes as an example the problem in Lancashire, and describes what is actually being done there. A map of the county indicates those towns from which some of the people and some industry ought to be moved, and those which can help to absorb it. This process has already begun to pass from the blue-print stage into actual bricks and mortar; a scale model and map are displayed of the development now in progress at Worsley to relieve overcrowding in Salford. Worsley is one of a number of Lancashire towns selected by the planning authority for early expansion.

The 14 New Towns are seen on a map, also in the first part of the stand. They are to be self-contained; work, recreational, social and other needs being met as the population grows. The rest of the stand tells how this is being done. The older-established new towns are now well under way. [Stands Nos. 457, 459 and 46, Gallery.]

Ministry of Works

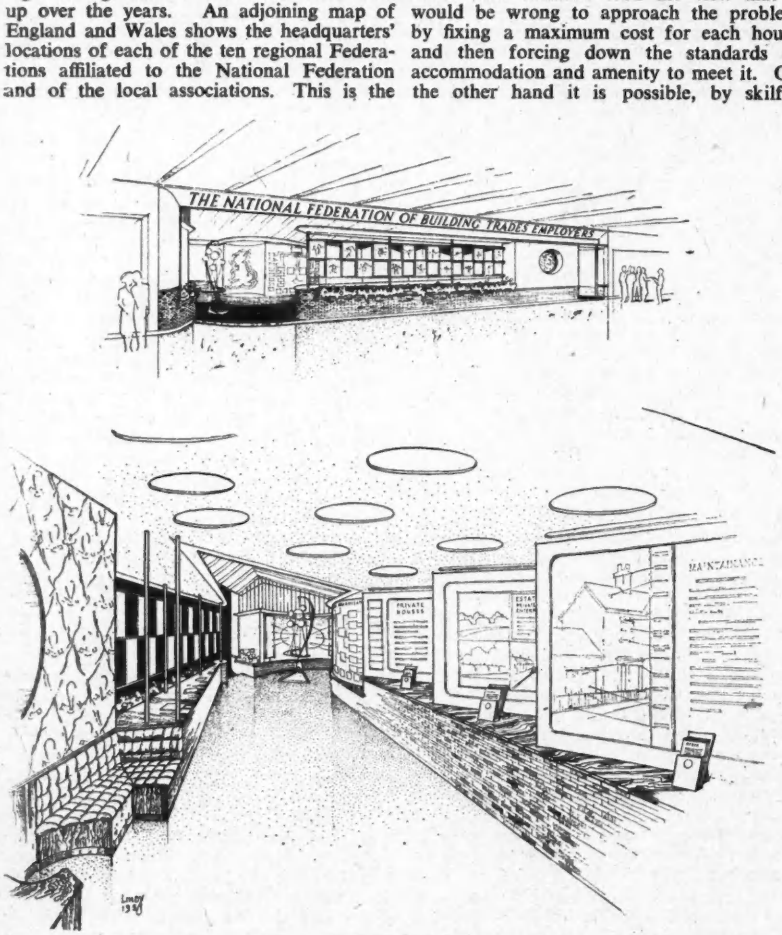
A LINK between builders and research workers is provided by the Technical Information Service which the Ministry of Works operates from regional offices in England, Scotland and Wales and the work of this service is shown on one of the stands.

It has become increasingly difficult for builders, especially the smaller firms, to keep in touch with technical developments which now cover a wide field. The Ministry has, therefore, appointed Technical Information Officers throughout the country whose dual role is to help builders to apply the results of research, and to keep research workers informed of the industry's problems.

The exhibit shows by wall panels and other means the various activities of this service. These include the organisation of exhibitions on building subjects, demonstrations of plant, lectures, film shows, and the production of technical publications. Throughout the exhibition, Technical Information Officers will be in attendance to answer questions about the service. [Stand No. 447, Gallery.]

Research and the Home

Another exhibit, "Building Research and Housing," illustrates how in practice research provides better homes. It deals with housebuilding, section by section, and shows how the application of research means greater comfort and economy for the householder. Applied research also makes for



The stand of the National Federation of Building Trades Employers. Kenneth J. Lindy, F.R.I.B.A., architect.

economical building and cheaper maintenance. The exhibit shows, for example, modern, efficient ways of laying foundations, and how time can be saved by the use of machines such as the mechanical auger.

The exhibit deals with design of walls; it shows especially how the cavity wall achieves recommended standards in an economical way. The exhibit further shows how timber, and cost, can be saved by well-designed roof pitches, how plumbing lay-outs save piping and methods of lagging save repairs. Heating systems are also shown which effect an appreciable reduction in fuel consumption. All these factors mean homes which are economical to build and maintain.

Other features of the display, which is concerned mainly with the construction of semi-detached, two-storey dwellings, illustrate ways of defeating dry-rot, insulating buildings against heat, fire and damp, and sound-proofing. Some non-traditional house designs are also shown. [Stands Nos. E. 107/8/9.]

Films on Building

Films of interest to the industry, including a new film on portable powered tools, will be shown by the Ministry in the National Hall Gallery on alternative days of the Olympia Exhibition.

Ministry of Fuel and Power

THE Ministry of Fuel and Power exhibit describes the technical advisory services which are available to assist industry in promoting the more efficient use of fuel and power. These services range from practical instruction in stoking to the provision of the means by which a comprehensive survey may be produced of the entire heat and power production and consumption of a factory or other industrial unit. The survey work is undertaken by the mobile testing service of the Ministry and the methods adopted are shown by means of photographs, diagrams and letter-press.

The exhibit shows how data relating to temperatures, pressures, work done, material handled, etc., are obtained by a wide variety of reading and recording instruments. The findings are then analysed by the fuel engineers of the Ministry, whose reports to managements and works engineers make suggestions for immediate savings, for possible process changes calculated to give higher efficiency, and for longer-term development in appropriate instances.

Recommendations based on surveys made by the testing service have suggested so far that savings of about 25 per cent. in fuel consumption are possible generally in industry. The Ministry's technical services are designed to show that such savings can be achieved much more readily by precise measurement, calculation and study than by recourse to guesswork and rule of thumb methods. Information about other advisory services of the Ministry, and pamphlets and publications on fuel efficiency, will be available in this section. [Stand No. 449, Gallery.]

The D.S.I.R. Exhibit

EFFICIENCY tests will be carried out during the exhibition, on an openable stove mounted in a brick test flue, and on a solid fuel cooking appliance similarly mounted by the Department of Scientific and Industrial Research. The tests are those which are normally carried out on solid fuel appliances at the Fuel Research Station, Greenwich, where the tests agreed between manufacturers, users and Government bodies are normally made.

The "live" apprentices stand which the L.M.B.A., in association with the National Federation, the L.C.C., the City and Guilds of London Institute and several of the Building Schools, has organised at the Building Exhibition. Members of the L.M.B.A. are arranging for relays of apprentices to work on the stand during the run of the exhibition.

The Forest Products Research Laboratory will show up to 70 samples of tropical hardwoods hitherto not used in this country. The samples are divided into light, medium and heavy hardwoods, and particulars of their properties and the purposes for which they can best be used will be described. A number of these hardwoods can be used to replace softwoods for building purposes. The Joint Fire Research Organisation will illustrate the methods used to test the fire resistance of floors in buildings. Photographs and script will deal with the tests and the minimum desirable standards, and there will be half a dozen models of typical floors shown.

Samples of aerated concrete and a description of methods of making and using it will be shown by the Building Research Station. The importance of autoclaving will be emphasised and there will be a short 16 mm. sound film shown on the subject. Four models showing common faults in the construction of parapet walls are exhibited. A model showing the method of measuring the load which steel and concrete bridges are capable of carrying is also on show.

Models are used by D.S.I.R. to demonstrate the uses and advantages of tower cranes when applied to the construction of small groups of ordinary dwelling houses. By careful planning of operations it is possible to complete a pair of houses in 64 days by this method. The tower crane reduces the need for unskilled labour and speeds up house construction. A particular advantage is that no unskilled labour need be on the scaffolding while building is proceeding so that more bricklayers can be used. In addition, roof framework can be completed on the ground and lifted bodily by the crane and placed in position. A further exhibit shows the development and use of the concreting skip which can transfer the whole of a concrete mix from the mixer to the site with considerable economy in manpower. [Stands Nos. 451-3-4 and 6, Gallery.]

H.M. Stationery Office

H.M.S.O. will have a bookstall at the exhibition for the sale of Government publications relating to the building industry. [Stand No. 455, Gallery.]

Fire Protection Association

THIS stand, which demonstrates the aims, objects and services of the Association, is also a reception centre for architects, builders and all others who may be interested in fire protection. [Stand No. 411, Gallery.]

The Worshipful Company of Carpenters' Building Crafts Training School

THE Worshipful Company of Carpenters —which dates from 1333—has always been actively interested in its craft, and up to 1666 was of operative importance, having supervision of timber buildings in the City of London. The Building Crafts Training School was founded at Gt. Tichfield-street by the Company in 1893 and has since made an indispensable contribution towards the encouragement of a high standard of craftsmanship without which the dignity of work cannot endure.

During the second world war important training of soldiers as carpenters, joiners, blacksmiths and sheet metal workers was carried out at the school and when army trainees were no longer forthcoming the Company co-operated for a time in the Vocational Training Scheme of the Ministry of Labour. Organised courses of practical and theoretical training are now provided in the various building crafts to meet the needs of apprentices and others engaged in the industry, and special consideration is given to the requirements of the recognised examinations held by independent bodies. The exhibits show a few examples of work recently executed at the school by the students, most of whom are apprentices. [Stand No. 474, Gallery.]

The Housing Centre

THIS stand is in two parts, a bookstall and a display on the housing task still before the building industry. The Centre, as an independent voluntary body, works for the improvement of housing conditions through the dissemination of information and education of an informed public opinion. The poster display is designed to bring home to the ordinary citizen and the building industry the tremendous need for not only

The model illustrated above, which is the work of nineteen-year-old William J. Taylor, apprentice joiner, of Twickenham, was awarded first place in the Federation of Master Builders' Festival Competition for a model of Holy Trinity Church, Poplar. The competition was open to all building trade apprentices and building students at technical colleges in the London Region, and nearly 200 entries were received. 37 of the models received were exhibited recently in County Hall, London, and the prize-winning models are again on show on the Federation's stand at the Building Exhibition.

the building of new houses, but also the replacement of obsolete houses and maintenance and conversion of those which are still structurally sound. This part of the exhibition is an example of the educational work which the Centre is doing throughout the year by means of touring exhibitions, meetings, conferences and research. [Stands Nos. 507-8, Gallery.]

Institute of Quantity Surveyors

MEMBERS and their friends are welcome to use the Institute's stand as a rest room, and visitors will be able to acquaint themselves with the aims and objects of the Institute. Selected exhibits of interest, which were on view at the Festival Exhibition held this year at the headquarters of the Institute, are on show. All who are interested in quantity surveying will be welcomed at any time during the exhibition. [Stand No. 522, Gallery.]

Woolwich Polytechnic

THE first three panels on this stand show a selection of the architectural work by first-, second- and third-year students. Two further panels are devoted to carpentry, joinery and plumbing, the design of the panels being varied to indicate the trade with a limited number of small models suitably attached and a photograph of each workshop. The letters in the heading of each panel have been executed in different materials allied with the particular trade. The brickwork section is represented by a simple brick wall of contemporary design. The stand has been designed, for economy reasons, using tubular scaffolding and has been erected by the boys from the secondary technical school. [Stands Nos. 467, 69 and 71, Gallery.]

Federation of Master Builders

A FEATURE of this stand is an exhibition of the winning models in the Federation's Apprentices' Festival Competition. The stand serves as a meeting place for members and is also used as an information centre. [Stand No. 436, Gallery.]

BUILDING EXHIBITION ARRANGEMENTS

Meetings, Lectures and Visits

THE following events are to be held at Olympia in connection with the Building Exhibition:—

Friday, November 16

Meeting of the Southern Counties Federation of Building Trades Employers (Conference Room, all day); visit by the Council of the Institution of Electrical Engineers.

Saturday, November 17

Meeting of the Guild of Bricklayers (Conference Room, p.m.); lecture, "Lower Cost Housing," by Mr. A. W. Kenyon, C.B.E., F.R.I.B.A., M.T.P.I. (in cinema off National Hall Gallery, 3 p.m.).

Monday, November 19

Meeting of the Institute of Clayworkers (Conference Room, p.m.).

Tuesday, November 20

Meeting of National Federation of Clay Industries (Conference Room, all day); lectures on "Decorative and Structural Uses of Timber," by Mr. J. R. M. Poole, and "Sound Practice in the Use of Timber," by Mr. Alwyn Jay (in cinema off National Hall Gallery, 3 and 5.45 p.m. respectively); visit by National Housing and Town Planning Council and the Institution of Heating and Ventilating Engineers; N.F.B.T.E. Reception and Tea (in the Pillar Hall).

Wednesday, November 21

Meetings of Co-operative Building Managers' Association (Conference Room, p.m.), and Architects' Benevolent Society (Empire Restaurant, a.m.); visit by London Builders' Foremen's Association.

Thursday, November 22

Meeting of the Institution of Sanitary Engineers (Conference Room, 5.30 p.m.); lecture on "Building Opportunities in Canada," by Mr. I. M. Leslie, J.P., Hon. A.R.I.B.A. (in cinema off National Hall Gallery, 3 p.m.); visits by Worshipful Company of Tylers and Bricklayers, Incorporated Society of Estate Clerks of Works and the Committee of the Faculty of Architects and Surveyors.

Friday, November 23

Visit by Institution of Structural Engineers.

Saturday, November 24

Meeting of Incorporated British Institute of Certified Carpenters (Empire Restaurant, p.m.); visit by provincial members of the Institute of Quantity Surveyors.

Monday, November 26

Meeting of the South-East Brick and Tile Federation (Empire Restaurant, a.m.).

Tuesday, November 27

Meeting of National Council of Building Material Producers (Empire Restaurant, a.m.); lectures on "Sound Practice in the Use of Timber," by Mr. Alwyn Jay, and "Decorative and Structural Uses of Timber," by Mr. J. R. M. Poole (in the cinema off the National Hall Gallery, 3 and 5.45 p.m. respectively).

Films

A Government film will be showing all day on each of the following dates in the cinema off the National Hall Gallery:—November 14, 16, 19, 21, 23, 26, and 28. A private showing of an N.F.C.I. film will take place at 12 noon on November 20, and will be open to the public at 5 p.m. on November 22 and 24. The D.S.I.R. will also arrange film shows in their own cinema off the Grand Hall Gallery.

A BUILDING QUIZ

WHAT CRAFTSMAN would you expect to see using a fitch? This is one of the questions posed in a quiz devised for the benefit of the Building Apprentices' and Students' Association (Rowing Club) in connection with the Building Exhibition.

The organisers of the exhibition have most generously given 21 guineas as prize money and the entrance fee for the quiz will be one shilling. The proceeds will be made available to the B.A.S.A. (Rowing Club), from whose stand (No. 536, Gallery) copies of the quiz form can be obtained.

A large variety of subjects connected with building are covered in the quiz; for example, entrants are asked in one question to give the chief source of supply of Douglas Fir, and in another are required to state where the Royal Pavilion is situated.

All visitors and exhibitors should get some enjoyment from this competition as it contains many interesting questions.

NEW EXHIBITS

An article on some of the new exhibits at the Building Exhibition will appear in our next issue.

TRADE EXHIBITS AT BUILDING EXHIBITION

THE stand of **Acrow (Engineers), Ltd.,** shows the complete range of Acrow steel formwork for all types of concrete structures, including adjustable steel props; steel floor-centres; Floorforms for floor construction; Ferroforms with wall clamps, and beam clamps for wall, column and beam construction. There is also the new Longform, which accelerates the erection of formwork for walls of more than average height and length. The same Longforms are also used as formwork for barrel-vault roofing. A large part of the display includes tubular scaffolding and scaffold fittings, and all types of trestles. [Stands Nos. E, 110-11-12.]

A new device is being shown by **F. H. Bourner and Co. (Engineers) Ltd.** It is the "Supa-Dynamic" plug-driving gun, which is self-ejecting, and claimed to be the fastest tool of its kind in the world. It can set four plugs a minute in steel, wood, rolled steel joists and various types of concrete. [Stand No. 491, Gallery.]

The main display of **Callow and Keppich Ltd.** consists of five double-sided panels, supported on metal legs, on each of which Stonite finishes are shown applied to woodwool in varying textures and colours. One of these finishes is named Stonite spatter finish, and is a new product. Opposite these panels a curved screen displays photographs of recent jobs on which these finishes have been used, together with specimen colour samples. On the reverse side of the curved screen and on the outside of the office partition adjacent to the screen are movable panels on which the application of the company's products are demonstrated. [Stand No. S, 337.]

As examples of modern forms of house heating by solid fuel, two types of convector fire—an openable stove and a model of a whole house heating unit—have prominent places on the **Coal Utilisation Joint Council's** stand. Convector type fires burn solid fuel with about twice the efficiency of the now obsolete stool bottom grate. One convector type fire is shown with fire, installed for heating a room in two ways—by radiation and by convection. The advantage to be derived from this kind of fire is that all parts of the room are kept at an even temperature by the circulating warm air. Heat which normally escapes through the surrounding brickwork is returned into the room, a fact which emphasises the efficiency of the appliance and its economical use of fuel. The second convector fire shows the installation when the convected warm air is to be used for background heating in an upper room. Installation diagrams are displayed near these two models. [Stands Nos. M, 254-55.]

Black and Decker portable electric tools, including saws, sanders, grinders, drills and screwdrivers, are being exhibited by **E. R. Cole Ltd.,** Coombe-road, Neasden-lane, London, N.W.10. Two new items have been added to the Utility range, a 5 in. sander and a 6 in. saw. The Coronet combination woodworking lathe with circular and band saw, disc and belt sander, and mortising attachment is also displayed, together with the P.J. router. They have also designed and are showing the prototype of a machine base provided with a quick action clamping device and cross slides giving traverse and cross traverse to a base block which can be bored to suit any portable electric drill stand otherwise arranged for mortising. [Stands Nos. H. 176 and J. 207.]

Two sections showing the installation of gas and coke appliances in low-cost housing estates form part of the display featured by **The Gas Council,** 1, Grosvenor-place, London, S.W.1. A section showing a method by which gas fires can be installed in large blocks of flats, and another showing typical heating, catering and water heating appliances for installation in schools are among the other items on view. Hospital equipment for sterilising; central heating; cooking and water heating, including a storage water heater specially suitable for first-aid rooms, which can immediately provide up to four gallons of boiling water is included on this stand. [Stands Nos. P, 299-300.]

Benfix prefabricated steel floor joists are being shown by **Johnson's Reinforced Concrete Engineering Co. Ltd.,** Artillery House, Artillery-row, London, S.W.1. These are bitumastic-coated before delivery by the Benfix Steel Co. Ltd. The company are also displaying drawn steel wire mesh reinforcement for concrete work, and Bricktor wall reinforcement. One end of the wall demonstrating the use of Bricktor is in cantilever construction. [Stand No. C, 45.]

Shell beam units are exhibited by **Wm. Logan and Sons, Ltd.,** 355, Evelyn-street, Deptford, London, S.E.8. These have been developed from a combination of two of the most advanced constructional principles: shell construction and stressed skin technique. They are preformed in barrel-vault shape, designed to definite three-dimension ratios for a given load. Their "shell" consists of layers of concrete spaced by an insulating core. The units span up to 12 ft. without intermediate support, their width is 24 in. [Stand No. K, 222.]

A foaming agent, which produces small, tough air bubbles and helps to confer workability on concrete mixes, is a feature of the **Pyrene Company, Ltd.'s** exhibit. For this "Phomene" composition it is claimed that used in a concentration of 0.5-1.0 per cent. of the gauging water, it enables very good fat mortars to be obtained from sharp sands with quite lean mixes. Much work has been done by the company at the Brentford works, and the results are demonstrated in convincing form on Stands Nos. 461 and 463, Gallery.

The LI dumper-dozer, a new machine, forms the chief exhibit of **Tutz Tractors Ltd.,** 294, High-street, Acton, W.3. This robustly built small angle dozer is fitted with a 10 h.p. diesel engine, and has hydraulic control to the dozer blade. It is mounted on patented tracks. The machine has a ground clearance of 13 ins., which should enable it to negotiate the worst conditions likely to be met. Another feature of this model is the half-yard bucket mounted on the rear. The bucket is designed to enable it to be used in conjunction with standard concrete mixers. [Stand No. F, 116.]

Vivian Loyd and Co., Ltd., in conjunction with their industrial distributors for United Kingdom and Eire, H. A. Saunders, Ltd., 836-842, High-road, North Finchley, London, N.12, are exhibiting the Dragon crawler tractor. A full range of ancillary earth-moving equipment is also available including Bull angle dozer, scraper, and logging winch. H. A. Saunders are the main Dragon distributors of the industrial version and earth-moving equipment for the U.K. and Eire. [Stands Nos. G, 162-9.]

M.O.W. WINTER LECTURES

Programme for December

THE following lectures are to be given during December in the Ministry of Works winter season of discussion-lectures on subjects of interest to the building industry:—

December 3.—"Some Problems of Tiled and Slated Roofs," by G. J. Langdon-Thomas, A.R.I.B.A. Technical Institute, St. Anne's-road, Eastbourne. 7.15 p.m. *December* 4.—"Good Practice in Plumbing," by G. Lloyd Ackers, M.I.C.E. Y.M.C.A., Connaught Hall, Blackett-street, Newcastle-upon-Tyne, 1. 7 p.m. "Machines for the Modern Builder: Some Recent Developments in Building Plant," by A. MacNiven-Brown, A.M.I.Mech.E. Twickenham Technical College, Egerton-road, Twickenham, Middlesex. 7.30 p.m. "Structural Use of Reinforced Concrete in Building," by A. E. Hewitt, A.M.I.Struct.E. City Museum and Art Gallery, Tavistock-road, Plymouth. 7 p.m. "Introduction to Site Costing for Builders," by R. H. James. Council House, Stoke-on-Trent. 7.15 p.m.

December 5.—"British Standards and Codes of Practice for Building," by C. Roland Woods, M.B.E., LL.D. George Palmer School, Basingstoke-road, Reading. 7 p.m. "Small Heating and Ventilating Installations," by J. C. Knight, A.M.I.H.V.E. City Technical College, Byrom-street, Liverpool. 7.15 p.m. *December* 6.—"Underpinning of Buildings," by F. D. C. Henry, B.Sc., A.M.I.C.E. Mining and Technical College, Church-street, Barnsley. 7.15 p.m. *December* 11.—"Factors Influencing the Performance of Woodworking Machinery," by P. Harris, B.Sc., A.M.I.Mech.E. Technical College, Northgate, Darlington. 7 p.m. "Essentials of Good Concreting," by E. Woodwark, B.Sc. Armoury Drill Hall, Newtown. 7 p.m. "Techniques and Devices for Improving Bricklaying Output," by C. S. Thompson, A.M.I.Mech.E. College of Further Education, Newtown-road, Hereford. 7.15 p.m.

December 12.—"Seasoning and Preservation of Timber," by P. L. Money, Tottenham Technical College, High-road, London, N.15. 7.30 p.m. "British Standards and Codes of Practice for Building," by C. Roland Woods, M.B.E., LL.D. "Therm House," St. Aldate's, Oxford. 7 p.m. "Floor Finishes," by F. C. Harper, Ph.D., B.Sc. Building Department, Technical College, Stoke-on-Trent. 7.15 p.m. "Building on Shrinkable Clays," by W. H. Ward, B.Sc., A.M.I.C.E. Technical College, Mayfield, Pelham-road, Gravesend. 7.15 p.m.

December 13.—"Prestressed Concrete," by F. Walley, M.Sc., A.M.I.C.E. Technical College, Great Horlon-road, Bradford. 7.15 p.m. "Essentials of Good Concreting," by E. H. MacMillen, B.Sc.(Eng.), M.I.C.E. Technical College, Chesterfield-road, Mansfield. 7.15 p.m. *December* 17.—"British Standards and Codes of Practice for Building," by C. Roland Woods, M.B.E., LL.D. School of Arts, Green-lane, Derby. 7.15 p.m. *December* 19.—"Introduction to Site Costing for Builders," by G. T. Beaumont. Technical Institute, St. Mary's-road, Kettering. 7.15 p.m. "Plastering," by H. Andrews, B.Sc., A.R.I.C. Building Department, Technical College, Manor Croft, Burton-on-Trent. 7.15 p.m.

THE USES OF HARDWOODS

D.S.I.R. Leaflet

THE increasing use of hardwoods for purposes which were formerly served by softwoods has brought on to the market an unusually large number of varieties of hardwoods. Many of them are of tropical origin and are on sale in this country for the first time.

"Hardwoods for Building and General Purposes" has now been published by H.M.S.O. for D.S.I.R. (price 1s. 3d.). It is intended for the guidance of builders, building contractors and other timber users. The leaflet gives in alphabetical order and tabular form the trade and botanical names of more than a hundred hardwoods, together with particulars of their outstanding characteristics and uses. The principal sources of supply, dry weights and degrees of resistence to decay of the hardwoods are given.

As many of the trade names in current use are unfamiliar to users, an index of the principal trade names applied to the timbers is provided. A foreword emphasises the importance of seasoning hardwoods before use, and also mentions some of the ways to avoid damage by insects.

THE SITE HANDLING OF MATERIALS FOR TRADITIONAL HOUSEBUILDING

Economies that can be Effected with the Help of Mobile Cranes

By J. F. EDEN, BSc, and N. S. PIPPARD

THE close study of any single aspect of production in housebuilding is always complicated by the difficulty of isolating the problem, and this is, perhaps, especially true of study of materials handling. Familiarity with conventional building processes engenders a tendency to regard manual servicing as an inseparable part of the fixing operation. The craftsman is always associated with his traditional assistant, and it is not often recognised that the servicing work is but a means to an end, and is not in itself directly productive.

No completely satisfactory substitute for the building craftsman is ever likely to be found, but the methods of servicing him are amenable to considerable variation, both manual and mechanical, without affecting the quality of his finished work.

Since the first world war, the housebuilding industry has accepted, albeit slowly, certain variations of traditional servicing methods. The concrete mixer has gradually displaced the "mixing-gang" in general practice, and hods are giving way to platform hoists. More recently, power barrows are beginning to supplant wheelbarrows for ground transport.

The change, however, takes place in individual operations. Consequently the new machines, however efficient, are limited in function and there is still a considerable amount of handling done by manual methods.

TYPICAL EXAMPLES

For the purpose of this analysis, traditional houses, typical of those now being built by local authorities, are taken as a basis, and it can be fairly assumed that the conclusions will be applicable in principle to the large majority of houses under construction, or projected, in Britain at the present time.

The weight of the material in a pair of typical semi-detached houses of traditional construction, each of 950 sq. ft. superficial floor area, is about 286 tons. This material is distributed as follows :—

Bricklayer,	153 tons	= 53½ per cent.
Concretor,	87 tons	= 30½ „ „
Plasterer,	30½ tons	= 10½ „ „
Carpenter,	7½ tons	= 2½ „ „
Roofer,	6 tons	= 2½ „ „
Other trades,	2 tons	= ¾ „ „

Unfortunately, however, most of the materials used for the houses have to be handled more than once before they are finally fixed. Some, such as hard core and aggregates, are "shot" on the site as near as possible to the placing or mixing point. Bricks, partition-slabs, precast concrete units and other durable materials are stacked in the immediate vicinity of the building until required, whilst doors, mouldings, sanitary fittings and like materials, being more liable to damage, are unloaded to a site store or dump and later carried direct to the fixing operative. Cement, plaster, and similar materials have to be kept dry and are usually stored separately near the building and used as required.

Operations such as the excavation and disposal of spoil, the erection of the scaffold, the preparation of timbers, the actual mixing of concrete, mortar and plaster, and the act of fixing all materials in the work are not dealt with here. The operations involving true handling time are considered to be the initial unloading of materials to the stack, site store, dump, or mixing point; and the carrying of materials from the unloading or mixing point to the fixing operative.

UNPREDICTABLE WORK

Occasionally these operations involve repeated handling because of abnormal site conditions or faulty organisation, but such repetition work is unpredictable and its volume cannot be estimated. It is assumed here that normal conditions prevail.

A simple analysis shows that even in the best conditions the actual weight handled considerably exceeds the weight of the material delivered, as is shown in Table I.

TABLE I

Process	Tons						
	Bricklayer	*Concretor*	*Plasterer*	*Carpenter*	*Roofer*	*Others*	*Totals*
1. Unload and stack or store near building	117.0	12.5	6.0	0.5	6.0	0.3	142.3
2. "Shoot" near mixing or placing point	30.5	67.0	16.0	—	—	—	113.5
3. Unload to site store or dump	0.5	3.0	1.5	7.0	0.3	1.7	14
4. Carry from stack or mixing point	152.5	70.5	29.0	0.5	6.0	0.3	258.8
5. Carry from site store or dump	.5	3.0	1.5	7.0	0.3	1.7	14
HANDLED TONNAGE	301	156	54	15	12.6	4.0	542.6

It will be noted that the actual handled tonnage is about double that of the material as delivered. It may also be observed that the total weight carried away from the stacks, stores and dumps (items 4 and 5), is greater than the sum of the weights of materials delivered to the site (items 1, 2 and 3), in spite of the fact that 13 tons (of hardcore) of the materials "shot" are not handled further. This is due to the weight of water added at the mixing point.

In general practice, when materials delivered to the site are shot direct on to the ground, little or no handling time is involved in this operation. A more realistic picture of the weights of material handled can therefore be obtained by neglecting item 2 in Table I, thus reducing the total weight handled to 429.1 tons, apportioned as follows :—

Servicing the bricklayer accounts for 270.5 tons, or about 63 per cent.
Servicing the concretor accounts for 89 tons or about 20¾ per cent.
Servicing the plasterer accounts for 38 tons or about 8¾ per cent.
Servicing the carpenter accounts for 15 tons or about 3½ per cent.
Servicing the roofer accounts for 12.6 tons or about 3 per cent.
Servicing the other trades accounts for 4 tons or about 1 per cent.

It will be seen that although the weights handled by the several trades fall into the same relative order as that of the delivered materials, the actual amounts involved are altered. Because of the large proportion of the concretors' and plasterers' materials which is shot, the bricklayers' materials assume added importance in comparison; while the weights handled by other trades, although affected, remain comparatively unimportant.

MAN-HOURS EXPENDED

It is now necessary to relate the weights handled to the man-hours and money normally spent on the work.

Detailed studies of handling times have not previously covered all the handling which has to be done on a housing site. Information recorded, however, during housebuilding operations involving about 1,000 houses, each of about 950 sq. ft. super, has provided the following figures :—

Man-hours spent in unloading materials	88	= 16 per cent.
Man-hours spent in carrying from stack or mixing point	438	= 80 „ „
Man-hours spent in carrying from store	24	= 4 „ „
	550	100

The man-hours are based on the averages for these houses, observed in the post-war period, and include the use of a small amount of mechanical plant. A recent national survey of productivity in housebuilding showed an average expenditure on mechanical and static plant of £60 per pair of houses. Of this amount £52 was absorbed by the cost of the use and depreciation of concrete mixers, scaffolding sheds, etc. An average of £8 only per pair can thus have been spent on mechanical aids such as hoists or other handling plant.

By breaking down the man-hours to trade levels and combining the results with Table I, as qualified above, the following data are obtained :—

TABLE II

	Bricklayer		*Concretor*		*Plasterer*		*Carpenter*		*Roofer*		*Others*	
	Tons	*Man-hours*	*Tons*	*Man-hours*	*Tons*	*Man-hours*	*Tons*	*Man-hours*	*Tons*	*Man-hours*	*Tons*	*Man-hours*
1. Unload and stack	117	61	12.5	5	6.0	4	0.5	2	6.0	4	0.3	2
3. Unload to site store or dump	0.5	1	3.0	1	1.5	2	7.0	4	0.3	1	1.7	1
4. Carry from stack or mixing point	152.5	324	70.5	66	29	24	.5	1	6.0	20	0.3	3
5. Carry from site store or dump	0.5	2	3.0	2	1.5	3	7.0	12	0.3	2	1.7	3
	270.5	388	89	74	38	33	15	19	12.6	27	4.0	9

The labour cost of handling, based on the foregoing data, and using a labourers' rate of 2s. 11d. per hour, is £80 4s. 2d., or about 10 per cent. of the average total labour cost of building the pair of houses. Including the plant costs mentioned above, the total cost is £88 4s. 2d.

The problem then is, briefly, "How can we most economically handle 429 tons of material which by present methods cost, to carry and lift, about £88 per pair of houses, and involve the expenditure of some 550 man-hours?"

It will be appreciated that if a reduction of the overall building time results from employing improved methods, the saving in costs can be greater than any saving in actual "handling" wages.

MECHANICAL HANDLING

In a problem of this kind, where so much human effort is spent in servicing work, it is reasonable to inquire how the machine can help.

It is important to note that around about 90 per cent. of the handling work has been completed when the roof is covered in. This fact shows that it is incorrect to claim that mechanical handling methods are uneconomical on the grounds that the machine cannot help after the roof is completed.

Obviously, the first and most important requirement of any machine which is to be used for this purpose is that it shall be extremely adaptable. With a small amount of labour expenditure, it must be able to carry a variety of materials from a number of different points on the ground and distribute them in fairly small quantities over a wide area, and at heights varying from ground level to a maximum of about 35 ft. Moreover, because the centre of its working activities will change as houses are completed and new houses started, the machine must be capable of easy movement around the site. Because many sites are small and quickly completed, movement of the machine from site to site must also be a simple operation. The rate at which the machine will be required to handle materials will depend upon the rate at which they are consumed, which in turn will be controlled by the number of craftsmen employed and their rate of building.

The rate at which traditional materials are normally consumed in housebuilding is extremely low, seldom averaging more than 10 cwt. per hour in the building of a pair of houses, and it is probably impossible to design a machine which will have all the attributes required and yet will work economically at such a low rate. Thus, if a machine is to be used, it is necessary to find some means of increasing the rate at which materials are consumed. Three possibilities suggest themselves: the employment of a greater number of craftsmen on each house; the building of more houses concurrently; or an increase in the productivity of the craftsmen. It appears likely that a combination of the first two at least will be required to obtain satisfactory results and that improved servicing methods may ultimately enable the individual craftsman to use the whole of his time on useful work.

Given such working conditions, the machine could be fully employed, but would be required to serve a wide working area. Consequently, the mobility of the machine within the working area is a requirement which assumes great importance. Furthermore, the work it would do would not necessarily correspond exactly with that done manually in the traditional manner. For example, the double handling of some materials could be obviated if the work were reorganised to suit the machine. A straightforward illustration is the handling of lintols, which would be placed in position in the work, rather than on the scaffold. The unloading of incoming materials, however, presents a very much greater problem, for whereas the machine would be capable of distributing everything from the lorries directly into the hands of the craftsmen, the organisation of material supplies and methods of work required would be impossible without a complete revolution in traditional building and in the relationship of the builder with his material suppliers. It seems reasonable to assume, therefore, that for a long time to come the weight of materials to be handled by the machine will not differ greatly from that shown in Table II.

SPECIFICATION OF A SUITABLE MACHINE

On the basis of the above arguments it is estimated that a suitable machine should be :—

(1) Adaptable and capable of handling all building materials speedily and in appropriate quantities.

(2) Mobile within its working area.

(3) Easily moved about the site and from site to site.

(4) Operable with a small handling-gang.

(5) Economical in running costs.

Of all known handling machines, the crane is most likely to fulfil all of these requirements. A specification for a suitable crane might be as follows :—

Reach. To lift materials from the delivery vehicle or roadside stack and to deposit them around the building, an effective reach varying from about 7 ft. to 40 ft. is required.

Hook Height. To serve all points at roof and chimney-stack levels the maximum hook height should be not less than about 35 ft.

Capacity. To deal expeditiously with the heaviest material, *i.e.*, wet concrete, a capacity of 10 cwt. is desirable.

**Slewing.* 360 deg. at a rate of not less than 1½ r.p.m.

**Luffing or other means of varying reach.* Not less than 45 ft. per minute.

**Hoisting.* Not less than 45 ft. per minute.

*N.B.—These control speeds are calculated to allow the crane to lift, place, and return in about 1½ to 2 mins. It has been assumed that all controls can be worked simultaneously. If this is not possible, higher speeds for individual motions would be necessary.

Travelling.—Since the crane would be required to serve more than one pair of houses under construction, it must be able to move along the front or rear of the buildings at a reasonable speed. It is not essential that the crane should travel loaded. Suggested speed: 40 ft. per minute.

Transport and Erection.—No special equipment should be required to transport the machine from site to site. It should be possible to use ordinary lorries thus avoiding the use of low-loaders or other special vehicles on the grounds of expense. For classification as a normal load for road transport the crane must be less than 7 ft. 6 in. wide and must not weigh more than 13 tons. If wider or heavier, special restrictions, e.g., a speed limit of 5 m.p.h., are imposed by existing regulations. The crane should be so designed that it is possible to unload and erect it, ready for use, in one day by a small gang and without other mechanical power than its own.

EXISTING TYPES OF CRANES

Considering the types of cranes at present available, there is none in the "crawler" or "pneumatic-tyred" classes which completely fills the above specification.

Normal mobile cranes, on crawler tracks or pneumatic tyres, have however been adapted and equipped with long jibs to meet most of the requirements in house construction. In such cases, with a straight jib mounted normally, a jib-length of 60 ft. is necessary. A swan-neck offers little advantage. It will be realised that with such a jib the crane would require a considerable space in which to work, and much of its reach would be wasted. An appreciable improvement has been effected by mounting the jib fulcrum at a height of 15 ft. to 20 ft. A jib length of 40 ft. is then sufficient, since the crane in this form can approach a building more closely.

From the housebuilder's point of view the principal disadvantage of normal mobile cranes which have been adapted in this way is their high cost. To ensure stability on uneven ground the weight of the machine has to be considerably increased, and the power required to move this increased weight over such ground is high. The housebuilder who wishes to use a crane is virtually forced to buy a machine capable of lifting 4–6 tons in order to lift 5–10 cwts. It should not, however, be impossible to design a crawler or pneumatic-tyred crane to fill the housebuilder's specification. The fact that it is not essential for the crane to travel under load may make it possible to reduce the overall weight and power required by using outriggers to provide the necessary extra stability. Also, further reduction in cost might be made if some initial site preparation, such as rough levelling or the laying of temporary tracks, were stipulated. Such measures would in any case be necessary if pneumatic wheels of normal size were used, and even with existing short jib crawler cranes the laying of sleepers is essential on many building sites, particularly in circumstances which

necessitate the repeated crossing of the same ground by the crane.

RAIL-MOUNTED CRANES

One method of overcoming this difficulty is to provide a level track for the machine. If this is accepted, the logical and probably the cheapest solution is the provision of two rails mounted on sleepers. Rail-mounted tower-cranes (Fig. 1) are very extensively used in France, Germany and Switzerland in the construction of the small blocks of flats which form the basis of the housing programme in these countries. On this work they have virtually supplanted other handling equipment.

A brief specification of a typical crane of this type is given below :—

Maximum reach	40 ft.
Maximum safe working load at maximum reach	10 cwt.
Hook height	46 ft.
Hoisting speed	98 ft./min.
Speed of travelling along rails	92 ft./min.
Weight of crane	4.2 tons
Weight of added ballast	6.5 tons
Gauge of rail track	6.56 ft.
Price	£1,300-£1,500
Labour time to erect	3 men approx. 4 hours

The weight of the heaviest unit of this particular crane when dismantled is 2 tons 15 cwt., so that it can be transported from site to site on an ordinary lorry. Alternatively, if road wheels are fitted to the base, it can be towed behind a lorry when the mast and the jib are removed.

Existing cranes of this type, therefore, although somewhat larger than necessary for house-building, come very close to fulfilling the specification suggested earlier, and are considerably cheaper than the adapted types which have been mentioned. The main difference between their use on the three-storey blocks of flats, on which they are being so effectively employed abroad, and on the two-storey houses built here, is that in the latter case the crane would have to move a greater distance along its rails to service a given volume of work.

Most continental tower-cranes are powered by electricity, so that unless a mains supply is available, a mobile generator of about 10 K.V.A. capacity is needed ; also they require a reasonably level track. In spite of these limitations, it is considered that the use of these cranes would result in considerable savings on many housing sites in this country.

Assuming that the capital cost of such a machine might be £2,200, including its rails, generator and all necessary equipment, the following estimate provides an approximate hourly cost :—

	£
Capital Costs.	
Crane and accessories	2,200
Five per cent interest on decreasing outlay over 10 years	605
Less probable salvage value (10 per cent)	220
Annual charges (based on 10-year life).	
Capital cost	220
Interest	60.50
Overhaul (33⅓ per cent)	73.33
Less salvage value	22
Hourly charges (based on 26 weeks running per annum).	s.
Capital	3.77
Interest	1.03
Overhaul	1.25
Fuel consumption	2.00
Oil and grease	.25
Maintenance	.75
	9.05
Less salvage value	.37
Hourly cost (s.)	8.68

This hourly cost takes no account of the allowances made by the Board of Inland Revenue in respect of capital expenditure on machinery and plant. The effect of these allowances, spread over the life of the crane and calculated at the current standard rate of nine shillings and sixpence, would be to reduce the hourly charge by about one shilling and sixpence.

In view of these costs of the crane, it would be necessary to arrange the site organisation around its operation, so that the utmost efficiency is achieved. If this was done, there would be a considerable reduction in building time, since the number of skilled operatives per pair of houses could be increased.

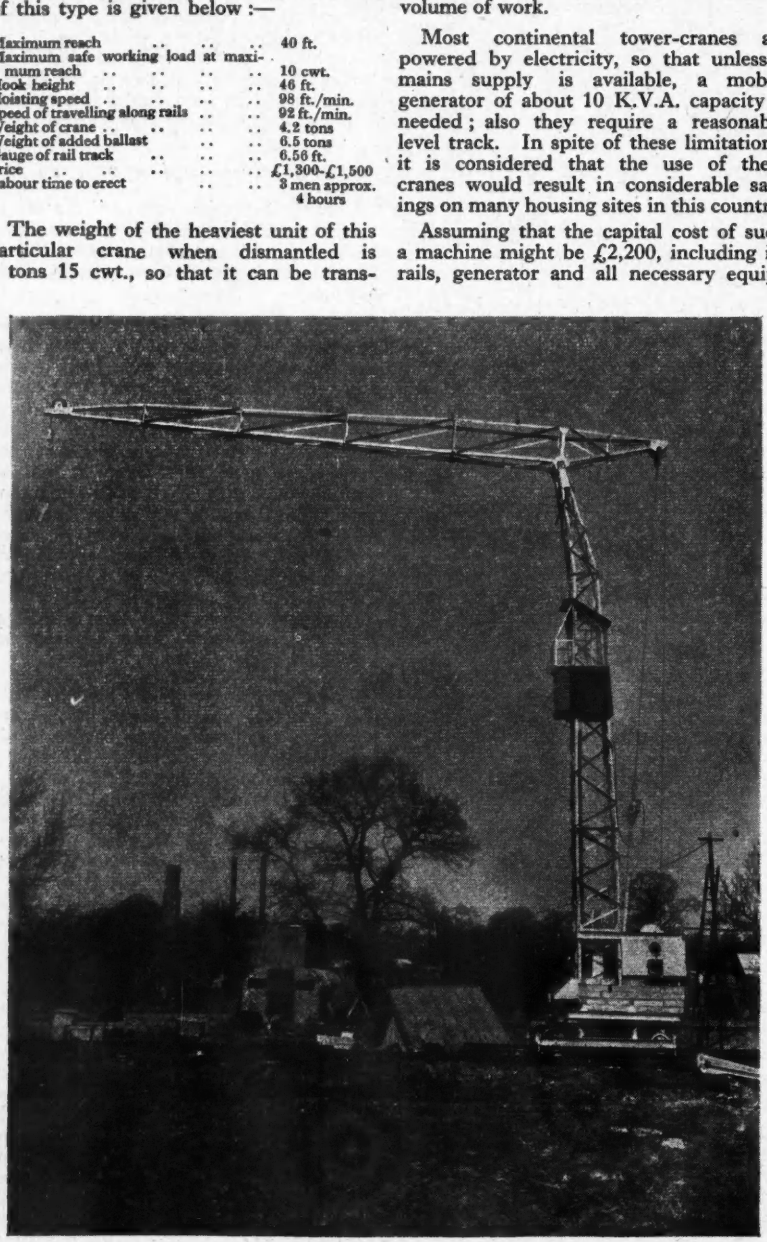


Fig. 1.—Rail-mounted tower cranes are now in common use in France, Germany and Switzerland.

EQUIPMENT REQUIRED

The efficiency with which the crane can be used will depend greatly on the choice of suitable equipment for handling the various materials. Concrete and mortar may be transported in bottom-discharge skips fitted with legs so that they can stand under the mixer. In order to save time when mortar is being distributed to a number of spotboards, it may be preferable to use shallow trays with a capacity of 2 or 3 cu. ft. instead of spotboards, so that it is unnecessary to replenish them so often.

The handling of bricks with the crane presents the most difficult problems. Preferably they should be delivered on the lorries in such a way that they can be unloaded by the crane. Failing this, they may be stacked on the ground in such a way that they can be transported subsequently without further manual attention by means of a device attached to the crane hook. The important characteristics of the apparatus required are that it should be light and speedy in operation and that it should pick up stacks of about 150 bricks from the ground and deposit them exactly where required by the bricklayer so that no unloading is required on the scaffold. The stack should not be more than two bricks wide so that there is plenty of room for the bricklayer to work. Devices for handling bricks, concrete and mortar are being used successfully on the continent.

PROBABLE COSTS

Before accepting the tower crane as a possible aid in British traditional house-building, it is essential to examine the economics of its use. Because of the lack of factual data in this country, such an

examination is difficult. The study of Continental housebuilding practice has, however, suggested possible methods of organisation, and an attempt is made below to apply these methods in theory to British housebuilding, and to compare the results with actual performance by normal methods.

A site has been selected from those examined in a national survey of productivity now nearing completion. The site is one of 13 pairs of traditional houses built for a local authority, and has been chosen as typical, both in cost and in the methods used by the contractor. It was reasonably level and no unusual conditions affecting costs were recorded. The site plan is shown in Fig. 2.

A programme, shown in Fig. 3, has been prepared for this site, on the assumption that a mobile crane is to be used. It must be emphasised that in programming the work, no abnormal productivity on the part of the individual craftsman has been assumed. The organisation, as planned, is highly efficient, for the tower crane will control production. At the same time the productivity expected is of average standard, but much of the avoidable non-productive time will be eliminated.

The organisation required is visualised as under.

On this particular site the tower crane would work from the rear of the houses, as this approach would considerably reduce the length of rail track in use at any one time.

Before building work is commenced, the site is prepared in the normal way—temporary offices, store sheds, etc., are erected, water services required are carried in, temporary access roads are made, and any necessary reduction of levels and site stripping carried out. In all these preliminaries, it is necessary to bear in mind the capabilities and limitations of the crane—e.g. store sheds, etc., should be erected within the crane's reach. The cost of the preliminary work would not be greater than that for any normal traditional site. It is possible that in the case of some pairs of houses it would be advantageous to prepare a level bed for the rail track. As this would require to be only some 10 ft. wide and would only occur occasionally, such a contingency is not allowed for in this estimate.

The make-up of the labour force required is: 2 labourers for excavation; 2 bricklayers for work to D.P.C.; 20 bricklayers for work above D.P.C.; 2 carpenters; 1 tiler; 1 tiler's mate; 2 scaffolders; 4 labourers for mixing and assisting crane gang when required; 1 crane operator; and 2 slingers working with the crane.

The constitution of this labour force is unusual in that all operatives, other than those engaged upon particular operations, as excavators, bricklayers, etc., should be considered as material-handlers and not attached to any particular trade.

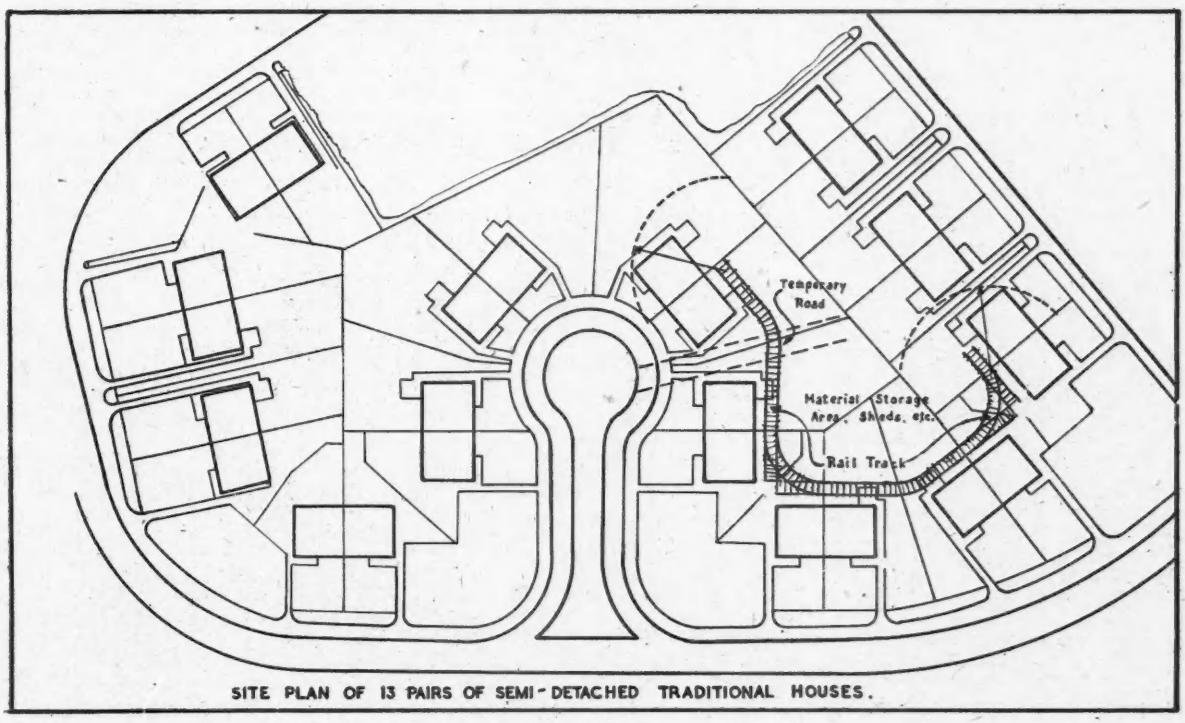
The crane required would be of the rail-mounted tower type, such as has been described, with a reach of 40 ft. Some 250 ft. of rail track would be required and this should preferably be prefabricated in lengths of about 12 to 15 ft. Suitable skips and containers would also be necessary. Other plant would be a 10/7 concrete-mixer, and sufficient scaffolding for four pairs of houses. The scaffolding should be prefabricated in sections for crane handling, with platforms similarly preformed in convenient sections.

The timber roof structures and first-floor joists would be assembled on the ground in sections suitable for hoisting and placing by the crane. By such methods, continuity of work is maintained and the general efficiency of the site organisation is increased.

THE OPERATOR'S IMPORTANCE

The selection of an efficient operator for the crane is of the utmost importance, second only to that of the general foreman, for he will act as a pivot for all work in which his machine is employed. Reference to the programme in Fig. 3 will show that a 4-day sequence has been used. Productivity is assumed as normal, e.g. bricklaying at 500 bricks per day per bricklayer. Each major operation is scheduled to occupy 4 days or a multiple thereof. If productivity were increased by bonusing or other means, the teams would be adjusted accordingly. Adoption of the 4-day sequence ensures uniform progression around the site, and avoids the necessity of using rail track uneconomically. It is considered that by arrangement of the work so that party and spine walls are not carried up higher than is absolutely necessary, the bricklayers can concentrate upon this internal work at the end of each lift while the scaffolding is erected externally, thus ensuring that bricklaying is continuous.

The programme is based on the 44-hour working week. To achieve the best results, the sequences shown must be rigidly adhered to and little flexibility is possible. To meet this difficulty, Saturday mornings have been omitted



SITE PLAN OF 13 PAIRS OF SEMI-DETACHED TRADITIONAL HOUSES.

Fig. 2.

from the programme. It is assumed that these weekly periods will be utilised to make up any time lost during bad weather, to maintain plant, and to deal with the many small jobs which require attention on any site, and which cannot be allowed for in a fixed programme.

Table III below shows the calculation of the man-hour expenditure:—

TABLE III.
MAN-HOUR EXPENDITURE.

Gang *	No. of Men	Days	Hours	Total Man-hours for 13 prs	Per pair of house-shells
1	3	70	8	1,680	142
2	4	66	8	2,112	180
3	2	52	8	832	71
4	2	52	8	832	71
5	2	54	8	864	78
6	10	56	8	4,480	701†
7	2	55	8	880	75
8	10	48	8	3,840	—
9	2	52	8	832	71
—	37	—	—	16,352	—
Add 14 Saturday mornings				1,632	—‡
Total man-hours				17,984	1,384

* As shown in Fig. 3.
† Including gang 8.
‡ Included in each gang's time.

In view of the fact that average production rates for the craftsmen have been assumed in the programme, it is reasonable to compare the actual handling time of the crane with the average handling time of 550 man-hours mentioned earlier.

This total of 550 man-hours, however, relates to the handling work in a complete pair of houses, whilst the programme deals only with this work to the "roofed-in" stage, which has been shown to include about 90 per cent of the total handling. Thus 500 man-hours per pair of house-shells appears to be the total normal man-hours against which handling with the crane may be expected to make a direct saving.

These man-hours can be allocated to the various operations, and if the estimated man-hours spent by the crane-gang are set against these average times, the probable saving amounts to 387½ man-hours per pair of house-shells, as shown in Table IV.

TABLE IV.

	Average Man-hours	Estimated Man-hours with crane	Saving with crane
Unloading ..	80	30	50
Servicing :			
Concreter ..	66	18	48
Bricklayer ..	316	51	265
Carpenter ..	11	9	2
Roofer ..	27	4½	22½
	500	112½	387½

The mixer gang will be engaged in mixing and placing concrete, mixing mortar and other work not considered as true "handling" as defined earlier. A certain amount of time is spent by both crane and mixer gangs in the initial erection of the crane and the laying and moving of the rail track. Spread over the site, this time amounts to 14 man-hours per pair of houses and reduces the saving to 373½ man-hours.

On the other hand, the crane will save a further 18 hours in the disposal of surplus spoil and 12 hours in the erection and striking of scaffolding, against normal times.

Thus a total saving of 403½ man-hours is estimated, so that if these 13 pairs of house-shells were built with the same highly efficient organisation as programmed, but with normal methods of servicing, they might be expected to cost 1,787½ man-hours per pair against 1,384 man-hours with the crane. Normal methods, however, can rarely provide the regularity of service necessary to eliminate delay and to ensure the continuity of production essential to follow a rigid programme such as that suggested.

This may be exemplified by the results actually achieved by normal methods on this site and recorded in the survey.

The details and costs given apply only to work to the "roofed-in" stage, *i.e.*, the following operations: (1) Trench excavations; (2) trench concreting; (3) placing of solid floor slabs; (4) external and internal walling in brick or slabs; (5) placing first-floor joists and timber roof structure; (6) placing roof covering.

The remaining operations, finishings, etc., would be common to both methods and would not employ the crane.

On this site, as observed, the plant which was used consisted of normal scaffolding, a platform-hoist and a 10/7 concrete-mixer.

The average labour force employed in these operations was: 7 bricklayers, 4 carpenters, 1 tiler, 1 tiler's mate, 5 bricklayers' labourers, and 4 general labourers.

With this labour force, the average man-hour expenditure per pair of "roofed-in" house-shells was 2,686 at a net cost of £350 1s. 0d. for labour only, excluding plant, labour on-costs, etc., while the overall building time for the 13 pairs of house-shells was 210 working days.

Based on the programme, the resultant estimated costs with the crane are as under:—

Man-hours per pair of house-shells, 1,384.

Cost (labour only) of house-shells, £186 15s. 4d.

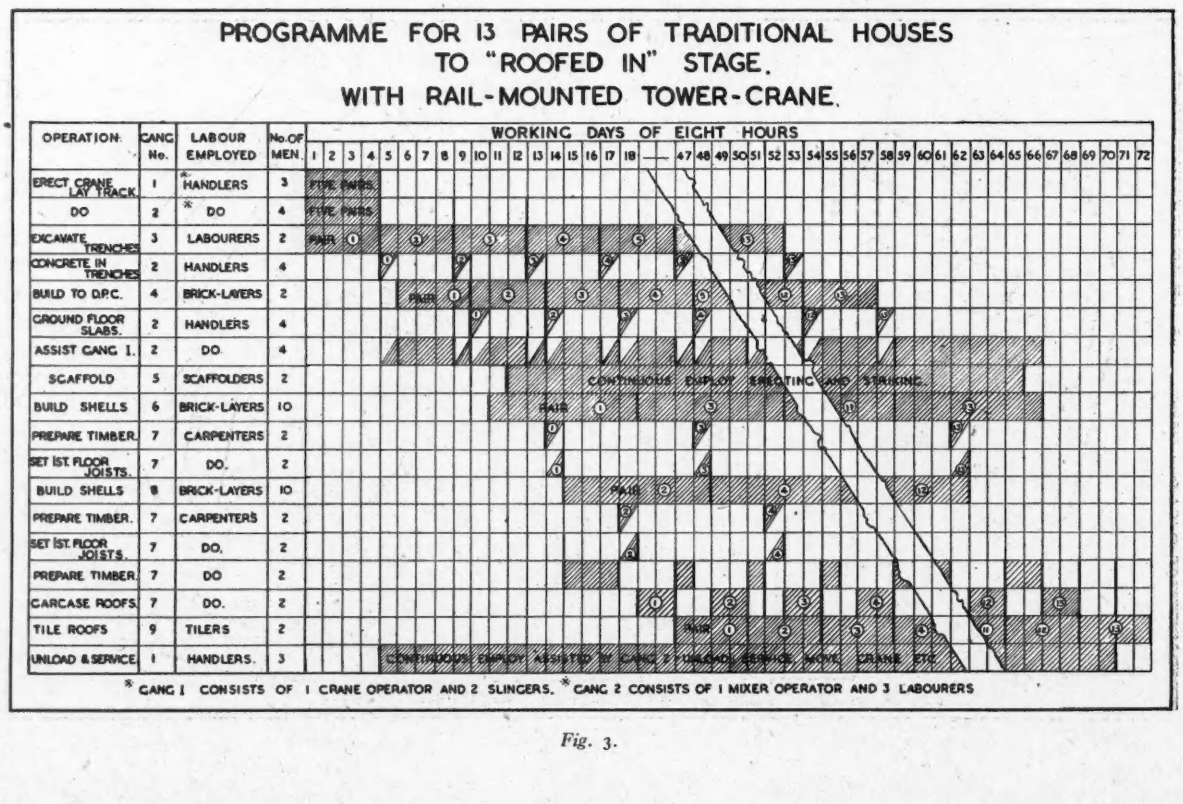


Fig. 3.

The overall building time for 13 pairs of house-shells is 79 working days.

The labour rates used are those paid at the time of building on the traditionally-built site.

Comparing these results with those actually obtained on the site :—

LABOUR FORCE AND COST PER PAIR OF HOUSE-SHELLS TO "ROOFED-IN" STAGE

	Traditional (actual)	*With mobile crane (see Fig. 3) (estimated)*
Man-hours ..	2,686	1,384
Labour cost ..	£350 1s. 0d.	£186 15s. 4d.
Building time ..	210 working days	79 working days
Labour force :—		
Skilled ..	12	27
Unskilled	10	10

Saving in labour costs with mobile crane—£163 per pair.

PLANT COSTS FOR THE SITE

TRADITIONAL (ACTUAL)	£	s.	d.
Hire of scaffolding for two pairs for 38 weeks at £8 per pair per month	152	0	0
10/7 concrete-mixer for 1,782 hours at 3s. 6d. per hour all-in running cost ..	311	17	0
5/10 platform hoist for 1,782 hours at 2s. 6d. per hour all-in running cost ..	222	15	0
Plant cost	686	12	0
SITE WITH MOBILE TOWER CRANE (ESTIMATED)	£	s.	d.
Hire of prefabricated scaffolding for four pairs for 12 weeks at £10 per pair per month	120	0	0
10/7 concrete-mixer for 580 hours at 3s. 6d. per hour all-in running cost	101	10	0
Mobile tower crane for 632 hours at 8.68s. per hour	274	5	9
Transport to and from site	40	0	0
Plant cost	535	15	9

Total saving on plant costs—£150 16s. 3d, or nearly £12 per pair.

Thus, on this typical site, a saving of about £175 per pair of "roofed-in" house-shells appears possible. These estimates of savings are, however, not complete without consideration of the effect of the decrease of building time on the overheads. It is reasonable to assume that by trebling his output, the contractor would need to increase his overheads, but not in the same ratio as the increase in output. For instance, it might be expected that he would have to increase his weekly overheads by 33⅓ per cent., which would lead to an actual saving of about 55 per cent. of the total overheads.

It will be observed that on this site the savings in labour costs and man-hours would be very much greater than those represented by about 400 man-hours in handling. In this connection it is of interest to note that the lowest man-hours recorded for comparable work in the national survey of productivity now nearing completion are 2,058 per pair of house-shells. Thus the lowest recorded figures were 271 man-hours more than the total of 1,787 calculated for the site on the basis of organisational efficiency equal to that assumed with the crane. This implies that it is difficult to obtain, in practice, this level of efficiency with traditional methods. From what has been observed on Continental sites, however, where the crane was made the focal point of the organisation, it would appear that this efficiency can be fairly readily achieved when a crane is used.

On many sites, therefore, in addition to savings on handling time, savings due to changes in organisation and consequent reductions in avoidable non-productive time can also be expected.

The work described above has been carried out as part of the research programme of the Building Research Board of the Department of Scientific and Industrial Research, and this paper is published by permission of the Director of Building Research.

IN PARLIAMENT

Housing Policy

MR. R. A. BUTLER, the CHANCELLOR OF THE EXCHEQUER, in his speech during the debate on the Address on the economic crisis, dealt with home investment. He said that the building programme which was authorised by the late Government last summer rested on the assumption that the output of the building industry would rise by five per cent in 1951 and ten per cent. in 1952 over the output in 1950. In the first half of 1951, however, the output of the industry, so far from increasing, was below the average output of 1950 as a whole. This was due partly to bad weather, partly to the shortage of building steel, and partly to the attempt to achieve too much in the wrong way.

The combined result of all these factors was that the building industry was now badly overburdened. Much more work had been started or approved than could be done with the labour and materials, particularly steel, which were available. Consequently, individual projects had been taking longer to complete than ever before.

This would get worse unless steps were taken quickly to lighten the burden on the industry. The only way to do this, particularly in areas where the excess demand was greater, was to reduce the amount of new building work which was started, until the industry was abreast of its tasks, and to secure that the subsequent programme did not exceed the capacity of the industry at any particular time. To do this and to speed up completion of projects, the Government had decided that no new starting dates for building work would be granted for operation during the next three months, except for special schemes approved as exceptionally urgent in the national interest. Starting dates already granted for operation after December 1 would be reviewed and postponed for at least two months, again subject to special exceptions. This decision would not apply to housing, which used very little steel, but the rate of starting new houses could be adjusted where this was necessary to improve the rate of completion and reduce the time taken to build houses.

The House might be interested to know that these measures should result in more building work of all kinds being actually completed in 1952 than would otherwise be possible, and they would stop further increases in overload.

MR. EMRYS HUGHES: How many?

MR. BUTLER: Among the more essential national requirements is a larger housing programme. It is the Government's intention to build more houses, but we cannot make satisfactory progress until the overload on the building industry has been dispersed by the measures I have announced, and some of the existing work is completed. After that, we intend gradually to introduce more housing into the building programme. This will be possible because housing, which does not use much steel, will be able to absorb labour and resources released from other building work held up because of the shortage of building steel.

MR. A. BEVAN asked if the Chancellor would be good enough to inform the House what kind of building projects would be stopped, and roughly in what part of the country starting dates would be postponed. He asked that because they had a global housing figure, which produced more houses in some parts of the country and fewer houses in the industrial areas, where the need was greatest.

MR. BUTLER said that he would prefer to leave that to one of his colleagues to deal with later in the debate. It was a perfectly legitimate question and Mr. Bevan could rest assured that the industrial areas were as much in their hearts as they were in his.

Referring to the decision to raise the Bank Rate by ½ per cent. and to increase the rate for advances to local authorities by the Public Works Loan Board to the appropriate market rate of 3½ per cent., MR. BUTLER said that the Minister of Housing and Local Government and the Secretary of State for Scotland proposed to bring forward the date of the regular review of the housing subsidy, which would otherwise take place in June, and to open discussions forthwith with the local authorities. The increase in the interest rates would be one factor in those discussions. They intended that the discussions should go as wide as the circumstances required, and should not rule out consideration of any changes in the present structure of the subsidies, if that were found desirable.

The Government were giving prompt consideration to the reversion of all softwood purchasing to private trade, with arrangements for a global limitation of purchases. They intended that the consumption of softwood should be maintained at its present level.

MR. GAITSKELL criticised this decision, and said he would have thought that the Chancellor would have considered the chances of the price of softwood going up still further if the industry were handed back to private enterprise. With regard to housing, were they to understand that no factory building whatever would be started in the next few months—no schools, no hospitals?

MR. WALTER FLETCHER believed that, given a greater effort, and with more intelligence, better planning and more assistance from the building industry, they would be able enormously to increase the building and maintenance programme.

MR. A. MAUDE said that for the first time they had heard somebody who was willing to tackle fundamentally the causes which had prevented an increased number of houses from being built—among them the fact that the building industry had been overloaded with competing forms of building, some of them far less necessary and far less ardently desired by the people of this country than houses to live in. The Chancellor proposed to make sure that the way was clear for building more houses.

SQUADRON-LEADER COOPER said that under the Labour Government housebuilding had proceeded at a snail's pace, notwithstanding that labour in the building industry was approximately what it was before the war. The truth was that too rigid controls had depressed productivity and forced many of our people to live in misery.

The King's Speech

In the King's Speech at the opening of the new Session, the following was the reference to housing policy:

> "My Government will do their utmost to stimulate the building of new houses for My people, using to the fullest extent both public and private enterprise. Their housing policy will have regard to the desire of many people to own their homes and to the special needs of the elderly."

MR. ATTLEE, for the Labour Party, said he was surprised that there was no mention of the 300,000 houses. He understood

that the building trade was fully occupied, and it was not realised that it was private enterprise that was building houses ordered by the local authorities. The Labour Party would wait to see how performance came up to promises.

The 300,000 Houses

MR. DOUGLAS JAY (Labour) said that Lord Woolton's "magnificent" 300,000 houses had become, and would remain, rather less "magnificent" castles in the air. Was he right in understanding from the Chancellor of the Exchequer that the number of new houses to be started in 1952 would be less than 200,000, and that the number under construction at the end of 1952 would be less than the number under construction at the beginning? Anyway, it was perfectly clear that the 300,000 houses had gone with the wind. If he had understood the Chancellor aright, the 200,000 houses were no longer very firm, either.

MR. BUTLER said that Mr. Jay was making a mistake. He would ask him to await the statement to be made by the Minister of Housing and Local Government.

MR. JAY said they would await that statement with the very greatest interest. The Chancellor had mentioned that he was going to put a stop to other forms of building, including office building in particular. But the Labour Government put a ban virtually on office building several months ago.

MR. G. R. HOWARD (Conservative) hoped that in his talks with local authorities the Chancellor of the Exchequer would bear in mind the policy of enabling people to purchase their own council houses. It would encourage the savings movement, as people would save the money if they knew they were able to buy the council house in which they lived. It would also help local authorities with their finances. But there must be safeguards. The present tenants must be allowed to buy them. Proper financial arrangements must be made for them to do so, and there must be security for those who could not purchase.

Mr. Macmillan's Speech.

ON Tuesday night, Mr. Macmillan, the Minister of Housing and Local Government, outlined the Government's housing policy. He said that the Chancellor of the Exchequer was doing everything possible to safeguard the housing programme. As part of the general regularisation of the financial structure the policy had been that local authorities should borrow from the Government at the appropriate market rate. If there was to be interest as between the Exchequer and local authorities, commonsense led to the conclusion that it should be at the market rate. He had invited the local authorities concerned to enter into negotiations with them.

Asked whether there was any understanding that any extra cost would be borne by an Exchequer subsidy, Mr. Macmillan said the Government were opening a broad review on all matters, and that would be one of the questions discussed when the new rates of subsidy were being settled.

Regarding the building programme as a whole it had been decided that the starting dates in general for all new projects should be kept in abeyance for three months. What had been granted would be reviewed so that a more careful scrutiny could be given to the programme as a whole and in order to expedite the work in hand. Individual projects exceptionally urgent in the national interest would be excepted. The housing programme would be exempt altogether. Those in charge of the housing programme would operate the machinery which was well known.

The housing programme was a great programme and covered a large number of small projects. The flow must be so arranged as to get the best continuity of the programme. The housing programme stood to gain rather than lose by the Government's proposals. The standstill of other building proposals might be of some corresponding benefit to housing at the point at which it was most important.

As to the Government's attitude toward the private ownership of houses, in that matter, as in many other things, there must be common-sense and moderation. While there were a large number of people who were compelled or who wanted to live in rented houses, there were also, he hoped, a growing number of people who wanted to own their houses, and they should be enabled to do so.

Since it was part of the Government's philosophy that a wide distribution of property rather than its concentration made for a sound community, the Government wished to pursue that aim wherever it was appropriate and could be done with due regard to the interests of those who wanted to live in rented houses. He hoped soon to give local authorities guidance on the matter regarding the building of new houses for letting and for sale, and in respect of the sale of existing houses to the people.

With regard to building standards, the late Minister of Local Government and Planning issued a valuable circular 38/51 to local authorities properly suggesting that, within the agreed Dudley formula, designs for a house could be produced which would maintain essential standards within a smaller total superficial area.

Mr. Dalton was the pioneer of simplification; he blazed the trail. He (Mr. Macmillan) was merely following humbly in his steps.

The Government's purpose was, in the present conditions of the nation's economy, to get the maximum results in terms of good houses out of the labour and materials they had or could make available from time to time. He was studying all aspects of the matter and hoped soon to make a decision. He hoped it would be possible to maintain standards of houses within the Dudley formula. The department was working on plans to see how by ingenuity the scale could be maintained and yet simplification be achieved.

He had already made contact with representatives of both sides of the building industry. Housing would have a priority second only to national defence, and the target remained 300,000 houses a year; Mr. Dalton had admitted that it was a possible target if all other projects could be put on one side. But they could not all be put on one side. The new towns that were springing up must have essential services, new building for essential industries must be done, and there was the problem of the balance between houses and other services, such as schools.

The Materials Situation.

Explaining the materials situation as he had found it on taking office, Mr. Macmillan said there must be an increase of at least one-third in the production of bricks. If all the needs of rearmament were taken into account, it might be more. With regard to cement, either a reduction in exports, a saving in use, or an increase in production were necessary. Supplies of plasterboard were inadequate. In some cases the delivery dates of cast-iron pipes were twenty-four months ahead. They had the promise from the Chancellor of the Exchequer that softwood consumption would be maintained at the present level, but it was clear that for more houses, either imports must be increased or a great advance made in the saving of softwood for all purposes. More than half of the total imports of softwood had to be used for other than housing purposes. A low percentage of saving in this sphere would give great results in housing.

He had been asked when they would reach their target. They would not reach it in 1951. Nor, he feared in 1952, although he believed they would make substantial progress in that year. Their first task was to press on with all that was now arranged and, as far as possible, make more ambitious plans for 1953 and 1954. If they could, subject to the overriding need that the people must have their defence and their preservation, create the spirit in the whole country of a housing crusade, they might cherish great hopes. It would need skill, ingenuity, contrivance and determination to get the greatest possible results out of the resources that were or could be made available. It would need as great a contribution from the departments not concerned with housing as from those immediately concerned.

MR. DALTON asked what other building projects would be cut to enable the Minister to move towards the target of 300,000 houses.

MR. MACMILLAN said it was exactly the question with which they found themselves confronted eleven years ago at the Ministry of Supply. All the statistics proved that, with the materials available, the target was impossible to achieve. But they achieved it by changes in design and a hundred-and-one other measures.

MR. DOUGLAS JAY asked how many houses the Minister expected to start in 1952.

MR. MACMILLAN said he could not answer that question. He hoped to be able, as the various methods he had in mind proceeded, to raise the programme of starting in 1952.

Standards of New Houses

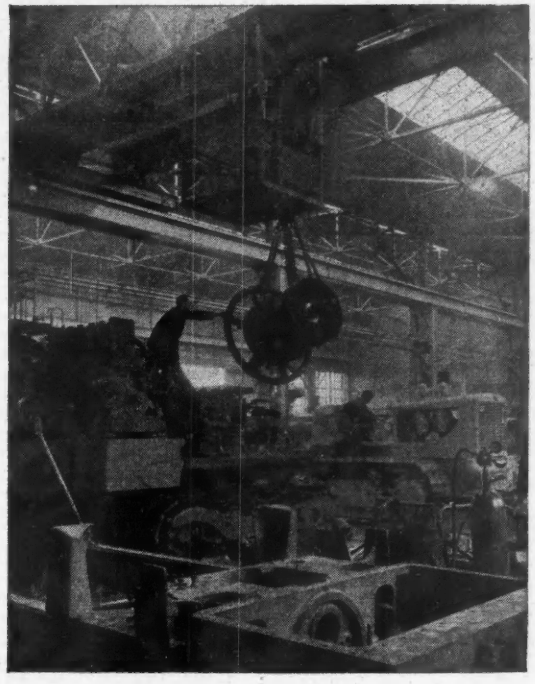
On November 8, MR. DODDS asked the Minister of Housing and Local Government to what extent changes were to be made in the standards of new houses.

MR. MACMILLAN said he was considering what suggestions he could usefully make for the guidance of local authorities.

Festival Gardens to Remain

MR. ECCLES, Minister of Works, announced that the Government would bring in a Bill to continue the Festival Pleasure Gardens in Battersea Park for a period up to five years.

He added that he was unable to make a statement about the future of the Festival buildings on the South Bank. Negotiations were proceeding with interested bodies. His Department was taking a lease of the greater part of the area between County Hall and Hungerford Bridge, and it was probable that most of the buildings there would have to be removed. The future of the remainder of the Festival site would have to be considered by the L.C.C. and by the Minister of Housing and Local Government in the light of joint recommendations of the Architect and the Chief Parks Officer of the Council and Mr. Hugh Casson, until recently Director of Architecture for the Festival of Britain.



Servicing mechanical excavators and bulldozers at Messrs. John Laing's Elstree plant depot.

"BACKWARDNESS" OF THE BUILDING INDUSTRY

A Reply to Critics

ON the principle that "seeing is believing," Messrs. John Laing and Son, Ltd., building and civil engineering contractors, demonstrated to members of the technical and national Press last week that recent allegations that building is a backward industry, refusing to spend money on research or adopt labour-saving methods, has no validity as far as at least one large firm is concerned.

At Messrs. Laing's plant and transport depot at Elstree, the ingenuity being exercised to maintain their large fleet of excavators, bulldozers and other vehicles in service at a time when the steel shortage has made the obtaining of many simple spare parts impossible, would do credit to any industry. The efficiency of ordinary maintenance routine, where vehicles ranging from Ford-8 vans to the heaviest earth-moving equipment are completely stripped down and overhauled, was sufficiently impressive. What most took the eye, however, was the enterprise shown in designing and modifying new tools and new machines for particular purposes, and the making of new spare parts that would normally be produced only in specially equipped factories.

The same degree of "backwardness" was apparent at the firm's Mill Hill laboratories. The successful search for a lightweight concrete, that would be free from the drying-out shrinkage that has been the downfall of many earlier attempts in that direction, was described, and samples of the new product, Thermalite, which is made largely from pulverised fuel ash, were available for examination.

Other work at the laboratories at present includes a search for a mechanical means of plastering that can be carried out without skilled labour. This and other ideas show promise, and typify the firm's approach to present-day problems of shortage of skilled labour and the rising costs of many traditional practices.

LAW REPORT

Architectural Surveyor's Claim for Fees

KING'S BENCH DIVISION.

BEFORE MR. JUSTICE LLOYD-JACOB.

Lewis v. Le Marchant

Mr. Herbert Lewis, architectural surveyor and consulting engineer, chairman of the Architectural and Building Surveyors' Society, of Uxbridge-road, Hayes, Middlesex, claimed damages in the King's Bench Division on October 3, from Katherine Lady Le Marchant, of Cadogan-square, London, S.W., for breach of a contract of agency, and fees for professional services.

Mr. Rodger Winn, for Mr. Lewis, said that he was employed by Lady Le Marchant in connection with the rebuilding, at a cost of £20,000, of the house, 36, Belsize-park, Hampstead, which had been destroyed by enemy action. There was also a claim in respect of 32, Belsize-park, and for a scale fee of £22 10s. 6d. for making a survey of 63, Cadogan-square.

Mr. Lewis's case was that the contract entitled him to earn 100 guineas from Lady Le Marchant and scale fees payable by the War Damage Commission, and that he was deprived of the opportunity of earning those fees by the termination of his employment. The defence was that Mr. Lewis submitted plans which would not reinstate 36, Belsize-park as a single-unit house, but as one maisonette and three flats, and that they were, therefore, valueless. It was also pleaded that the plans were not in accordance with modern architectural practice, and were unsuitable for acceptance by the War Damage Commission and for the purpose of obtaining licences.

Mr. Justice Lloyd-Jacob, giving judgment, said that various criticisms had been made of Mr. Lewis's professional conduct, and it had been suggested that he was at fault in accepting the instructions of Lady Le Marchant that she desired that 36, Belsize-park be rebuilt in the form it was before the bombing. "That does not seem to me," said his lordship, "to be a proper comment about an architect. The defendant was the person who was to determine how the property should be rebuilt." Stating that he was in doubt about the real reason why Lady Le Marchant withdrew Mr. Lewis's authority, the judge said: "I am driven to the conclusion that he was endeavouring honestly and to the best of his ability to do his work, and that the defendant, by terminating his authority, made it impossible for him to complete his part of the bargain. She has failed to satisfy me that she was justified in terminating the agreement."

Judgment was entered for Mr. Lewis for £362 5s., with costs.

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HEALTH SERVICE BUILDINGS

Circular to Local Authorities

A MINISTRY OF HEALTH CIRCULAR (Circular 41/51) to all local health authorities, issued on November 8, refers to Circulars 55/50 and 107/50, and requests information by the end of November on any capital building schemes for local health services which will cost more than £1,000 and which it is proposed to embark upon during the financial year 1952-53. The location of any such scheme (e.g., maternity and child welfare clinic, ambulance station, occupation clinic), and its likely cost, are among the particulars required. The circular goes on to say that "it is imperative that in the present building situation new building proposals should be strictly limited to schemes of real urgency." Proposals at present under consideration by the Minister are excluded from the scope of the circular.

The Minister's decision, the circular continues, whether schemes so notified may proceed will be given in a submission by the local authority of the information included in Form L.H.S. 101/52.

The circular also draws attention to an amendment to paragraph 8 of Memo. L.H.S. 120/50, which now reads: "Instead of waiting to be notified of the starting date before inviting tenders, the authority may invite tenders at the same time as they apply to the Ministry for a starting date."

SUPER PURITY ALUMINIUM ROOFING

As an alternative metal covering for roofs whose original lead covering has become unserviceable, either through age or theft, super purity aluminium is arousing increasing interest. The British Aluminium Company, who are pioneering the use of super purity metal, believe that the recently completed roof to the dome of the Norton-road Junior School, Luton, is a good illustration of the work that can be done. The dome is octagonal on plan, the bases being 12 ft. The high ductility of the aluminium enabled bossing to be used in certain difficult positions, such as the junction of tilting fillet surround and bottom of dormer cheek. Apart from shears and seaming pliers, wooden tools were used throughout. The tongued and grooved roof boarding, with all nail heads punched down, was first covered by sarking felt fixed by means of aluminium alloy clout nails. On each of the eight sides, the setting out of the sheets was based on the centre line, panels being restricted to 10 sq. ft. in area and care being taken that cross welts did not meet on the hips. Jointing of the main roof panels was by means of single lock welts, while double lock welts were applied to the dormer tops, which were adjusted to provide a good fall back. Cleats to all welts were fixed at not more than 15-in. centres. The total weight of super purity aluminium used was approximately 3.5 cwt., the thickness of the metal being 22 s.w.g.

On the left is the Dome of the Norton-road Junior School, Luton.

NEWS IN BRIEF

Town and Country Planning Association

Mr. Russell W. Kerr has resigned his position as director of the Town and Country Planning Association. Communications should be addressed to the secretary until a new appointment is made.

Appointment of Private Secretaries

Mr. Harold Macmillan, Minister of Housing and Local Government, has appointed Mr. J. E. Beddoe to be his principal private secretary and Mr. G. W. Moseley his assistant private secretary.

Mr. Hugh Molson, Parliamentary Secretary to the Ministry of Works, has appointed Mr. P. Jenkins to be his private secretary, and Mr. Ernest Marples, Parliamentary Secretary to the Ministry of Housing and Local Government, has appointed Mr. J. R. Iles as his private secretary.

Hostel for Women Students

Following the grant from the Lord Mayor's National Thanksgiving Fund of £600,000 to the Sister Trust, the council of governors have now decided to put up a new building on the eastern half of the north side of Mecklenburgh-square, W.C., to constitute a hall of residence for about 100 women and married students. It is expected that it will take some years to erect the new building, for which the architects are Sir Herbert Baker, R.A., and A. T. Scott, F.R.I.B.A.

Builders' Support for Government

At a meeting of Luton and Dunstable builders, held at Luton, on October 31, the chairman, Mr. Leslie B. Sell, said they had been called together to discuss ways and means of assisting the Government to carry out its proposed housing target. It was agreed to send the following telegram to Mr. Harold Macmillan, Minister of Housing and Local Government: "The Luton and Dunstable builders, being anxious to increase the number of houses built, desire to co-operate to this end and make the following suggestion to the Minister: The builders ask for equality of treatment with local authority houses, and pledge their complete resources to the task of housing the homeless by providing houses for sale and to let, both private and for the local authorities."

The Use of Tower Cranes

The tower crane in use on a large building at Denmark Hill by the contractors, Messrs. Wates, which was the subject of a Press visit last week, organised by the D.S.I.R., was Weitz crane type G-12. The Weitz crane used by Messrs. John Laing and Son, Ltd., in connection with the construction of blocks of flats on the Hurlingham site for Fulham Borough Council was the subject of an article in *The Builder* of April 20 last.

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Employment in Building Industry

At the end of September 1,452,000 people were employed in the building and contracting industries, a decrease of 3,000 compared with the previous month. In the same period the total working population increased by 31,000.

L.M.B.A. Beer-mat

The L.M.B.A.'s well-known coat of arms has been reproduced on a beer-mat for use in the L.M.B.A. Club at the Building Exhibition. It takes the place of the earlier beer-mat with the words "London Master Builders' Association" in scroll which proved so embarrassingly popular at the last two Building Exhibitions.

The Apprentice Master Scheme

The proposed termination by March next of the Apprentice Master Scheme is viewed with concern by the Further Education Committee of Liverpool Education Committee. They emphasise that in view of the continued measure of unemployment on Merseyside and the shortage of skilled craftsmen in the building industry throughout the country, it is most important that the scheme should be continued. The Education Committee has accordingly decided to ask the Minister of Works to take all possible steps to ensure the continuance of the scheme.

"Keep the Industry in Balance"

Speaking at Buxton on November 10, MR. A. E. STEVENS, a member of the National Council of the Federation of Master Builders, said that he wished to make only one comment on Mr. Butler's statement in the House of Commons on November 7. "I feel certain," he said, "that he would not wish the building industry to get out of balance. Whilst the national interest may be served by the deferment of starting of new building for a few months, the individual building firm must keep his craftsmen in full employment. Not all types of craftsmen are employed on the job all the time. The bricklayer gets on to the job early, the plasterer a little later, and so on. We master builders must plan our work accordingly. The building industry cannot be turned on and off like a tap if we are to get full productivity and retain the best type of men."

PLUMBING TRADES' TRAINING SCHEMES

More Apprentices Indentured

SPEAKING at the annual meeting of the Plumbing Trades National Apprenticeship Council, held in London recently, MR. D. A. G. REID, the chairman, said he felt that the P.T.N.A.C. was national in name only, as it had not secured full national recognition of the conditions of apprenticeship which it advocated. This recognition was bound up with certain outstanding questions which had been before the National Joint Industrial Council for nearly a year, and he felt that the answers to these questions were of very great importance to the National Council; he also felt that the N.J.I.C. should be pressed for early replies.

In regard to the Plumbing Industry Further Education Council, the chairman said that during the course of the year (arising from the consideration of the B.A.T.C. Fourth Report) P.I.F.E.C. had been brought into being. It must, however, be appreciated that a council could not be established with the immediate prestige and authority that other old-established councils now had in the field of education. P.I.F.E.C. must make its own way and build up its own reputation and prestige, and this was a matter of time.

The report for the year ending June 30 last of the hon. secretary, Mr. A. E. Soones, showed that although the statistical reports from the area and local councils were incomplete, the available number of apprentices indentured for the period was favourable, and it was therefore gratifying to note the following position as compared with the previous 12-month report (figures in parentheses).

Total number of apprentices indentured ...	3,253	(2,414)
Apprentices indentured during period under review	348	(396)
Apprenticeships completed during period under review	241	(121)
Apprentices still in training	1,572	(1,210)

The National Studentships

The Material Producers' Awards Council of the P.T.N.A.C. has again made four national plumbing studentship awards this year of £50 each; one to each of three areas in England and Wales and one in Scotland. The 1951 awards were made to the following:

Area No. 1.—Mr. R. S. D'Arcy, 18, Hillroad, Pinner, Middlesex.

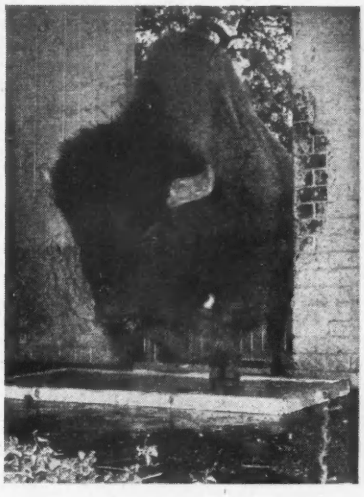
Area No. 2.—Mr. K. Walker, 47, Wiganroad, Westhoughton, Lancs.

Area No. 3—Mr. P. B. Johnson, 6, Mill Hill, Cropwell Bishop, Nottingham.

Area No. 4.—Mr. J. G. Fyfe, 54, Rosebery-street, Aberdeen.

This year's successful students were able to visit factories, building sites, works, installations, shipyards, etc., for the purpose of increasing their knowledge of the processing and actual use of the various materials used in the plumbing industry.

Applicants for awards in 1952 must be plumbers under the age of 26, but in the case of an apprentice who has served in H.M. Forces special consideration will be given regarding the age limit. All applicants must have passed the Final City and Guilds examination in plumbing or its equivalent. Application forms and conditions from the Hon. Secretary, Mr. A. E. Soones, Plumbing Trades National Apprenticeship Council, 15, Abbeville-road, Clapham, S.W.4, by January 1 next.



Punch, one of the bisons at the London Zoo, making an impression of his hoof in wet concrete for incorporation in a new factory which is being built for Concrete, Ltd., makers of Bison floors. Punch and another bison, Mickey, also of the London Zoo, were adopted by the firm two years ago.

BUILDING WAGES

6d. an Hour Increase Demanded

A claim for an increase of 22s. a week, or 6d. an hour on basic wage rates, for about a million building workers has been submitted to the employers' national organisation by the National Federation of Building Trade Operatives. The increase was first called for at the federation's annual conference last June, and the executives of the 12 unions affiliated to the federation decided to make the demand at a joint meeting in September. The demand will be considered at the next meeting of the National Joint Council for the Building Industry, to be held about the middle of January.

The claim is in addition to the cost-of-living increase of 1½d. per hour which, it is expected, will come into operation in the first week of February next as a result of the rise in the cost of living in 1951.

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PLASTERING ON BUILDING BOARDS

M.O.W. New Advisory Leaflet

PRECAUTIONS to be taken in choosing plaster and in applying it to the surfaces of boards are described in No. 21 in the Ministry of Works series of advisory leaflets, which has been published by H.M. Stationery Office. The price has been increased from 2d. to 3d. with the new leaflet. Prices of back numbers have been increased accordingly, and the postage rate for "up to four copies" is increased from 1d. to 1½d.

Leaflet No. 21 ("Plastering on Plasterboard and Insulating Fibre Building Board") tells the man on the job what precautions to take in mixing and applying plaster so as to avoid such troubles as rippled surfaces, falling plaster, cracking and "popping." Suitable plasters, the mix and the thickness for single-coat and two-coat work, are set out in tabulated form. An earlier leaflet, No. 17, deals with the fixing of fibre building board wall linings.

These advisory leaflets are designed mainly to meet the needs of the small builder, clerk of works, foreman and craftsman, and give information in practical and handy form about the results of research and the latest developments in building practice.

Copies of Leaflet No. 21, and of previous leaflets in the series, are obtainable from H.M. Stationery Office (post orders to P.O. Box No. 569, London, S.E.1), or through booksellers. Price reductions will be made on large quantity purchases.

TRADE NEWS

New Registered and Regional Offices

Bristowes Tarvia, Ltd., have opened new registered offices at Dysart-road, Grantham, Lincs. (Tel.: Grantham 821), and regional offices in Bicester, Blackhill (near Exeter), Manchester, Grantham, West Drayton, Hereford and Streatham.

Building Exhibition Notice

Among the notices of stands at the Building Exhibition which appeared in our issue of November 9, we gave the name of one exhibitor as "A. Dreyfus, Ltd." We have since been informed that the correct title of this business is Reparations-Dreyfus, Ltd.

Change in Directorships

Following upon the recent death of the chairman, the late Sir Henry T. Holloway, the remaining managing directors of Holloway Brothers, Ltd., have resigned from that position, but will continue to be directors of the company. Mr. P. W. E. Holloway has been appointed chairman and managing director, Mr. L. J. Holloway vice-chairman and managing director, and Messrs. P. H. T. and V. H. Holloway managing directors. Messrs. W. Storey Wilson, Rupert Holloway and B. I. Palmer will continue to be directors.

Centering for Slab Construction

Blaw Knox, Ltd., have recently developed Hyco centering to speed up work and reduce construction costs. Briefly, this centering consists of lattice-girder units of various lengths, which obtain their strength from scientific stressing and not by sheer "bulk." The units are claimed to be so light that one man can easily handle each section, and have turnbuckles on the lower boom so that the whole section can be pre-stressed in order to be perfectly level after the load has been added.

HOUSING CONTRACT AND TRAVELLING TIME

"An Obligation to Pay"

COMMENT was made at a meeting of the Market Rasen Urban District Council on November 8 at the inclusion of £557 to cover the cost of travelling time and fares when the final account for the building of 18 council houses was presented. The total cost of these houses was £24,573, including travelling time and additions to the cost due to price fluctuations.

The clerk (MR. ROY SORFLEET) stated that he had been in communication with the Ministry of Housing and Local Government on the question of the addition of travelling time to the contract price, and the view of the Ministry was that as the R.I.B.A. standard form of contract made no provision for such expenses it was deemed to have been included in the original contract figure.

The council's architect, MR. WARREN NEIL, A.R.I.B.A., stated that it had been necessary to import labour from other districts.

MR. SORFLEET said that in the bill of quantities it was stipulated that local labour should be employed, and as this labour could not be got it had been necessary either to import labour or not build at all.

MR. H. V. BECKETT said it would not have been fair to add £500 or so to the tender price if other people had been tendering, but this was, in fact, a negotiated tender.

COUN. MRS. NETTLESHIP said that there was at least a moral obligation to pay, and the clerk said it was probably a legal obligation, too.

The accounts were approved, including payment of the travelling allowance.

BRICKS FROM WOOD WASTE

A New Dutch Venture

[From a Correspondent]

ONE way of utilising the by-products of sawmills in Holland has been found in the manufacture of wood bricks from sawdust, shavings, etc. There have been proved eminently suitable for many types of building work, especially for interior work and for non-load-bearing partition walls.

Their sound-insulating properties make these bricks excellent for dividing walls in houses and office buildings, and their high heat-insulating properties are an asset in the construction of cold-storage warehouses and refrigerators. Indeed, the "Atmota" brick, as it is known, has already been used in the construction of cold-storage warehouses, laboratories, hospitals, schools, meeting-halls, waiting-rooms, concert halls, in the insulating wall of frostproof repositories and in various other capacities where sound and heat insulation is of importance.

Compared with ordinary bricks, the "Atmota" has many favourable qualities. It is very light in weight, having a specific gravity of only 0.57, which results in easy handling and a saving in transport expenses; furthermore, foundations might well be less heavy than if ordinary brick were used.

The wood brick is so made that it takes cement mortar readily and is pleasant to handle. It can be chopped into halves or quarters and yet does not break easily during transport or in loading or unloading, an economy of from 6 to 10 per cent. being effected in this way over normal bricks.

Another favourable property is its ability to take nails or screws without any previous treatment or without the use of rawlplugs or similar devices.

The brick is non-inflammable and when tested to red-hot heat no ignition was observed.

Usual sizes of manufacture are 24 by 12 by 5 cm., 24 by 12 by 6 cm., 24 by 12 by 7 cm., and 24 by 12 by 9 cm.

THE SCOTTISH BUILDER

Scotland's Housing in September

THE NUMBER of new permanent houses completed in Scotland in September was 2,501. This brings the number of completions this year up to 16,167. The total of new houses built under the post-war building programme is now 139,240 (107,064 permanent and 32,176 temporary). Including accommodation made available by conversions and adaptation of existing premises, requisitioning and in service camps, 151,687 homes have now been provided in Scotland since the war.

These figures are included in the quarterly housing return issued by the Department of Health for Scotland.

September's total of 2,501 new permanent houses includes 2,186 built by local authorities and the Scottish Special Housing Association, 216 by private enterprise and 99 by Government Departments.

The number of male workers employed on the construction of new houses and the preparation of housing sites was 27,800 at the end of September, compared with 28,400 at the end of June. These figures do not include the number of building and civil engineering workers employed in small works or directly employed by local authorities.

At the end of September the number of operators engaged on the repair and maintenance of existing houses (including conversions, adaptations, extensions, etc.) was estimated at 21,500.

The Timber Position

GIVEN full freedom to import timber the trade could provide sufficient timber for the 300,000 houses a year, which was the target of the Conservative Party, and also supply the many and varied industries which the trade served, said MR. JOHN BUCHANAN, chairman of the Scottish section of the Timber Trade Federation of the United Kingdom. He was speaking at the dinner of the section in Glasgow on October 31.

There was no gainsaying the fact, continued Mr. Buchanan, that the state of the market to-day was dangerous. Prices had risen far too quickly for it to be otherwise. But the responsibility for the present situation rested on the shoulders of the late Government, who had allowed a cold war to develop with the Baltic suppliers over the reasonable prices which the Finns and the Swedes were asking for their 1950 production.

Consequently, stocks were allowed to go dangerously low, and against that background the Government allowed the partial reversion to private buying. The irony of the present situation was that there would be much more timber available than this country needed to purchase if they combined the output of the "freed" countries (Finland and Sweden) with those of Russia, Yugoslavia and the dollar countries, where the Governments retained the monopoly of buying. Neither of these blocs alone could meet their requirements, and so they artificially created scarcity in each bloc.

So long as these conditions remained there was little hope of prices being forced down, and not until the trade was completely free could they reintroduce some competition among shippers. Under partial freedom last year the trade had succeeded in buying 852,499 standards against 327,000 standards bought by the Government. The trade had imported timber on the assurance that the Government would issue licences for 90 per cent. of it, but that pledge had not been honoured, and to-day imports were pouring into the country almost beyond the capacity of the ports to handle them. Despite that, licences were harder to come by than usual, and it appeared that the softwood position had not yet reached the Whitehall gentlemen who issued the licences.

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NEW BUILDINGS

Aberdeen.—Tawse & Allan, 343, Union-st., are the architects for electrification of Premnay, Logie-Durno and Cluny schools and schoolhouses.

Dumbarton.—Corporation is to build at an estimated cost of £11,580 eight houses, for which the architect is William Wilson, Municipal-chbrs., Dumbarton.

Dumfriesshire.—C.C. have plans in hand for a scheme at Markland Moffat for a new children's home, for which the architect is George Bartholomew, A.R.I.B.A., A.R.I.A.S., County-chbrs., Dumfries.

Dundee.—Plans are to be prepared for an extensive addition to the Royal Infirmary for the E.R.H.B., for which the architect is James Donachie, A.R.I.B.A., The Board Offices, 43, Blackmain-rd., Dundee.

Edinburgh.—Plans in hand for a new nurses' home, estimated to cost £16,000, which is to be erected by the Edinburgh Royal Victoria Hospital Board.

Edinburgh.—Corporation is to erect at an estimated cost of £124,000 at Lampaen-rd., on the Carrick Knave area, approved public school, for which the city architect is A. G. Forgie, A.R.I.B.A., Municipal-chbrs., Parliament-sq., High-st., Edinburgh.

Glasgow.—Plans to be prepared for the erection at Panmuir-st. of new baths and other erections for Shaw & MacInnes, Ltd., Firhill Ironworks, Possilpark, for which the architect is John S. Boyd, 248, West George-st., Blythswood-sq., Glasgow, W.C.2.

Glasgow.—Plans to be prepared for the Glasgow Theatres, Ltd., for their scheme of alterations and

additions at Paisley-rd., Toll, to the Imperial Picture Houses, for which the architects are Lennox & Paterson, F.R.I.B.A., 147, West George-st., Blythswood, Glasgow, W.C.2.

Glasgow.—Plans to be prepared for the erection of new showrooms at 42 to 72, Millburn-st., Townmill-rd., also storage buildings, for D. G. S. Catani, for which the architect is Robert Sutherland, 2, Ailsa-dr., Rutherglen.

Glasgow.—Plans in hand for the new halls at Dixon-st. for the new Bridgegate Church of Scotland, for William T. Greer, 23, Myrtle-pl., Crosshill, Glasgow, S.2.

Glasgow.—Plans are to be prepared for new building, etc., to be erected at Charlotte-st. and The Gallowgate, for which the architect is James Hamill, 30, MacFarlane-st., Glasgow, E.C.

Glasgow.—Plans being prepared for the extensions to the properties at 387 to 393, Argyle-st. for William Stevenston and Co. (Lead), Ltd., 74 to 80, Brown-st., Anderston, for which the architect is A. E. Henderson, Rubislaw-dr., Bearsden, Lanarkshire.

Glasgow.—Plans are being prepared for extensions to the factory buildings of William Burns (Glasgow), Ltd., which will be erected at 25 and 27, Admiral-st., and for which the architect is David Miller, 22, Monteith-ave., Westerton, Lanarkshire.

Glasgow.—Plans in hand for new factory at Cavendish-st., Eglington Toll, for which the architects are Will. J. B. Wright & Kirkwood, F./A.R.I.B.A., Carlton House, Blythswood-sq., Douglas-st., Blythswood, Glasgow, W.C.2.

Inverness.—Rossleigh, Ltd., have had plans for reconstruction of existing premises and erection of showroom, offices and canteen at King-st. and Tomnahurich-st. approved by Dean of Guild Court. Est. cost is £42,000.

Inverness.—Dean of Guild Court has approved scheme for layout and erection of 78 Cruden type houses at Hilton by the Scottish Special Housing Association at an estimated cost of £99,536.

Motherwell-Wishaw.—Plans so far prepared for an extension to Colville's Works, estimated to cost £80,000, for which the architectural staff of Colville, Ltd., 196, West George-st., Blythswood, Glasgow, W.C.2, are responsible.

Perthshire.—Plans are to be prepared for a scheme of extensions, estimated to cost £18,000, which is to be erected at the Bridge of Earn Hospital and for which the architect is James Donachie, A.R.I.B.A., The Board Offices, 430, Blackmain-rd., Dundee.

Renfrewshire.—Plans in hand for new Catholic Chapel and other offices which are to be erected on a Bishopston Village site and for which the architect is Thomas Cordiner, A.R.I.B.A., Blythswood-chbrs., West George-st., Blythswood-sq., Glasgow, W.C.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

NOVEMBER 17.

***†Prescot U.D.C.**—56 houses and ancillary works at Shaw-la. housing site. E. & S., Council Offices. Dep. £2 2s. (each case). Tenders by December 10.

Seisdon R.D.C.—Eight houses at Brantley-la., Bobbington. L. E. Tarplee, Council Offices, Wombourn. Dep. £3 3s.

NOVEMBER 19.

†Droitwich B.C.—Demolition of cottages at 6-16, Friar-st. and erection of eight houses at the site. B.E. & S., Town Hall. Dep. £2 2s.

NOVEMBER 21.

***†Birmingham City.**—8 shops and 15 flats, corner of Digbeth and Rea-st. City E. & S. Dep. £2 2s.

Burnham-on-Sea U.D.C.—16 houses at Burnham-rd., Highbridge. Nicholls & Barton, 41, St. Mary-st., Bridgwater. Dep. £2 2s.

***†Camberwell Boro'.**—136 dwellings, Sydenham Hill estate. S. J. Harvey, T.C. Dep. £5 5s. Tenders by January 3, 1952.

†Eastbourne C.B.—Construction of Ratton County sec. sch. B.S., 2-4, Saffrons-rd.

†Gloucestershire C.C.—Erection of hutted classroom block. City A., Shire Hall. Dep. £2 2s.

***†Thurrock U.D.C.**—91 houses. E. & S.

NOVEMBER 22.

***†Isle of Wight C.C.**—III phase of secondary school park scheme, The Fairway, Sandown. F. H. Booth (A.), County A., Newport. Dep. £3 3s.

Narberth R.D.C.—12 houses at Kilgelly and eight houses at East Williamston. J. O. Parry & Lewis, Ammanford. Dep. £3 3s.

***†Surrey C.C.**—School at Hinchley Wood, Esher. County A., Kingston.

***†Surrey C.C.**—Primary school at Reigate. County A., Kingston.

***†Surrey C.C.**—New primary school, Sheerwater East, Woking. County A., Kingston.

NOVEMBER 23.

***†Lothingland R.D.C.**—12 houses at two sites. G. W. Setterfield, Council Offices, Rectory-rd. Dep. £2 2s. Tenders by December 17.

NOVEMBER 24.

***†Hendon B.C.**—Seven houses, 46 flats and eight maisonettes at Mill Hill. B.E. & S., Town Hall. Dep. £3 3s.

***†Leyton B.C.**—42 maisonettes and flats on various sites. B.E. & S., Town Hall. Dep. £2 (each contract).

***†Portsmouth T.C.**—56 flats at Nelson-rd. A. E. Cogswell & Sons, Prudential-bldgs. Dep. £3 3s.

***†Portsmouth T.C.**—16 bungalows and 16 flats at various sites. City A., Municipal Offices, 1, Western-parade. Dep. £2 2s.

***Whitby U.D.C.**—32 houses, Helredale-rd. Peacock & Bewlay, 224, Hagley-rd., Edgbaston, Birmingham, 16. Dep. £2 2s.

NOVEMBER 26.

Caerns C.C.—Nine houses at Cefn Hendre. County A., County Offices, Caernarvon. Dep. £2 2s.

***†Grantham B.C.**—33 houses, Harrowby-la. and Belton-la. B.S. Dep. £2 2s.

Mansfield Woodhouse U.D.C.—72 houses at Forest Town. W. W. F. Shuker, Council Offices, Manor-hse. Dep. £3 3s.

***West Sussex C.C.**—Police houses, Horsham, Littlehampton and Worthing. County A., Chichester.

NOVEMBER 27.

Banbridge, (N. Ireland) Housing Trust.—72 dwellings with ancillary works. 12, Hope-st., Belfast. Dep. £3.

†Barnack R.D.C.—Erection of 6 houses. Council's Architects, 16, Broad-st., Stamford.

Beeston and Stapleford U.D.C.—12 houses at Ryecroft estate. G. C Hardy, Town Hall Dep. £2 2s.

***†Walthamstow B.C.**—Five shops with maisonettes over and eight garages at Billet-rd. Boro' A. Dep. £2 2s. Tenders by December 12.

***Winsford U.D.C.**—80 dwellings at Greville housing estate. E. & S., Council Offices. Dep. £10 10s.

NOVEMBER 28.

***†Durham C.C.**—Proposed ambulance station at New Herrington. G. R. Clayton (F.), Court-la., Durham.

***†Essex C.C.**—Erection of two new schools. H. Conolly (F.), County Hall, Chelmsford.

***Harrow U.D.C.**—Alterations and additions to Roxteth J.M. and I. sch. E. & S., Council Offices, Uxbridge-rd., Stanmore. Dep. £2.

***Macclesfield B.C.**—Four shops, four maisonettes and five garages at Weston. B.A., 3, Jordangate. Dep. £2 2s.

Penybont R.D.C.—Eight houses at Cefn Cribbwr. M. Mathews, Penybont Offices, Colty-rd., Bridgend Dep. £2 2s.

***†Wandsworth B.C.**—48 dwellings at West Hill-rd. C., Municipal-bldgs.

NOVEMBER 30.

***†Chesterfield R.D.C.**—Store and staff accommodation and cleaning and salvage depot, Loco Brook, Pilsley. J. B. Wikeley, E. Dep. £2 2s.

***Gainsborough U.D.C.**—41 houses and site works, White's Wood-la. housing site. Wm. Saunders and Partners, 24, Castle Gate, Newark-on-Trent. Dep. £3 3s.

Kirkcudbright T.C.—36 houses at Dovecroft. A. C. Watson, Town Clerk. Dep. £1 per copy.

***Reigate B.C.**—Six maisonettes, The Crossways, Merstham. B.E. & S. Dep. £2 2s.

DECEMBER 1.

Barmouth U.D.C.—88 dwellings in three contracts. E. Ifor Price, Council Offices. Dep. £3 3s. each contract.

***†Eastbourne C.B.**—32 flats, junction Victoria-dr. and Central-av. B.S., 2-4, Saffrons-rd. Dep. £2 2s.

***Wilts C.C.**—Proposed erection of jun. and infants' school at Penhill. F. I. Bowden (A.), County Hall, Trowbridge. Tenders by January 10.

DECEMBER 3.

***Birkenhead C.B.**—Primary school, Prenton. Boro' A., 25, Hamilton-sq. Dep. £2 2s.

***†Walthamstow B.C.**—24 flats, junction of Grosvenor Park-rd. with Hoe-st., and 10 flats, junction of Gt. Barnabas-rd. with Boundary-rd. Boro' A. Dep. £2 2s. (each). Tenders by December 17.

***Ware U.D.C.**—17 houses, Presdales estate. E. & S., The Priory. Dep. £3 3s.

DECEMBER 4.

***Durham County Police Authority.**—Eight police houses at Red Hills estate. G. R. Clayton (F.), Court-la., Durham.

DECEMBER 5.

***Salford T.C.**—57 flats at Lord-st. City Engineer's Office, Town Hall. Dep. £3 3s.

DECEMBER 6.

***Bedfordshire Standing Joint Com.**—Five police houses at Riddy-la., Luton. County A., Shire Hall, Bedford.

DECEMBER 7.

Southwell R.D.C.—Eight flats and 10 houses at Edwinstowe, S., 8, Westgate. Dep. £2 2s.

***Sparkhill.**—Methodist church buildings, Sparkhill, Birmingham. Botteley and Chaffer, Newtonchbrs., 43, Cannon-st., Birmingham, 2.

DECEMBER 8.

Monmouth R.D.C.—72 houses at Llandogo. J. H. Thraves (L.), 63, High-st., Newport. Dep. £3 3s.

***York T.C.**—13 flats at Navigation-rd. Chas. J. Minter, Guildhall. Dep. £3.

DECEMBER 10.

***Crewe B.C.**—14 shops and 12 flats over at Elm-dr. B.E. & A., Municipal-bldgs. Dep. £2 2s.

***Deptford B.C.**—12 flats, St. Donatt's-rd., New Cross, S.E.24. C. Dep. £2 2s.

***Huntingdon C.C.**—Conversion of Old Grammar School and erection new block for proposed C.P. School, Ramsey. County A., Huntingdon.

DECEMBER 11.

***East Ashford R.D.C.**—Four houses at Molash. C. F. Field, Clerk.

DECEMBER 12.

***Nottingham T.C.**—Secondary schools, Wollaton Park. City E. & S. Dep. £2.

DECEMBER 13.

***Brentford and Chiswick B.C.**—Café at Chiswick House. B.E. & S. Dep. £2 2s.

***†West Sussex C.C.**—School, Northgate, Crawley. County A., Chichester.

DECEMBER 14.

***Bournemouth C.B.**—Adaptation of Meyrick Park Golf Club house into flats. B.A., Town Hall. Dep. £2 2s.

***Harrow U.D.C.**—36 flats and 40 dwellings at two sites. E. & S., Council Offices, Uxbridge-rd., Stanmore, Middlesex. Dep. £2 each case.

DECEMBER 17.

***Camberwell B.C.**—60 dwellings at East Dulwich-rd. S. J. Harvey, Town Hall. Dep. £5 5s.

***Gravesend Boro'.**—43 houses, Westcourt estate. B.E. & S. Dep. £2 2s.

***Romford B.C.**—64 houses and 4 bungalows, Fuller's Farm housing site. B.E. & S. Dep. £3 3s.

JANUARY 3.

***Newcastle-on-Tyne T.C.**—1,000 flats at Longbenton housing estate. City A., 18, Cloth Market. Dep. £5 5s.

NO DATE.

Salford T.C.—Erection of hutted class-room block at Trafford-rd. Halliday and Agate (FF.), 14, John Dalton-st., Manchester, 2. Dep. £2.

***Southgate B.C.**—Two houses at two sites. B.E. & S., Town Hall. Dep. £2 2s.

Tynemouth T.C.—254 houses at Chirton Grange South estate. B.S., 16, Northumberland-sq., North Shields. Dep. £2 2s. each contract.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

DECEMBER 1.

Cumberland C.C.—County S. (Materials).

DECEMBER 3.

***Thurrock U.D.C.**—E. & S. (Materials).

DECEMBER 10.

***South-East Metropolitan Regional Hospital Board.**—Internal redecoration at Joyce Green; Southern and West Hill hospitals, Dartford. E. J. M. Durrant, Bow Arrow Hospital, Dartford. Dep. £3 3s.

ROADS, SEWERAGE AND WATER WORKS

NOVEMBER 23.

Manchester T.C.—Advance preparation of housing sites. City Surveyor's Office, Town Hall. Dep. £2 2s.

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NOVEMBER 26.

Wolverhampton C.B.—Hordem-rd. sewage pumping station. B.E., Town Hall. Dep. £2 2s.

NOVEMBER 30.

†Jersey Public Health Com.—Island main drainage scheme. S. A. Gothard, M.I.C.E., South-hill.

DECEMBER 4.

Clacton U.D.C.—Sewering of various council areas. S., Town Hall. Dep. £2 2s.

Southport C.B.—Reconstruction of Lord, Nevill and Duke streets. B.E., Town Hall. Dep. £2 2s.

DECEMBER 5.

Stoke-on-Trent T.C.—Preliminary street works and sewers. City E. & S., Town Hall. Dep. £5.

DECEMBER 7.

***Melksham U.D.C.**—Roads and sewers at Woodrow-rd. housing estate. E. & S. Dep. £2 2s.

DECEMBER 10.

Ashford U.D.C.—New roads and sewers at Burton Farm estate. A. F. Webster, 5, North-st. Dep. £3 3s.

DECEMBER 11.

Gravesend B.C.—Sewage disposal works extension. B.E., 6, Woodville-ter. Dep. £1 1s.

DECEMBER 12.

Falmouth B.C.—Water scheme, Contract No. 6, comprising mainlaying at Penryn, Mylor and Truro. Rofe and Raffety, 3, Victoria-st., Westminster, S.W.1. Dep. £2 2s.

DECEMBER 18.

Eton R.D.C.—Denham drainage. John Taylor & Sons, Artillery-hse., Artillery-row, Westminster, S.W.1. Dep. £10.

DECEMBER 31.

New Hunstanton U.D.C.—Sewerage of Old Hunstanton. Sir Cyril Kirkpatrick and Partners, Chandos Court, Caxton-st., S.W.1. Dep. £5 5s.

GENERAL BUILDING WORK

(LONDON)

Croydon.—Hospital Additions.—T. G. Crump, J.P., F.R.I.B.A., 9, King's Bench Walk, Temple, E.C.4, has prepared plans for mental observation ward and psychiatric clinic at Mayday Hospital, Thornton Heath, for Regional Hospital Board.

Edgware.—Houses.—John Laing & Sons, Ltd., propose to build four Hardwick-type houses at Hartland-dr. Plans by firm's own staff.

Hammersmith.—Flats.—Preliminary sketch plans by Hammett and Norton, AA.R.I.B.A., 29, Sackville-st., W.1, for erection of three flats at St. Peter's-rd., W.6, have received B.C. Housing and Town Planning Committee approval.

Hammersmith.—Boiler House.—Plans for boiler house, to cost £45,000, at St. Dunstan's-rd. Hospital have been prepared by Johnson and Crabtree, FF.R.I.B.A., 8, Robert Adam-st., London, W.1.

Hammersmith.—Flats and Shops.—Housing and Town Planning Committee have approved the preliminary sketch plans by E. D. Lyons and L. Israel, AA.R.I.B.A., 26, Seymour-st., W.1, for erection of three shops and 14 flats at Uxbridge-rd., W.12.

Harrow.—Dwellings.—U.D.C. to build 37 houses at Castleton-rd.; eight houses and two shops at Whittington Way, Pinner; and six old people's dwellings at College Hill-rd., Harrow Weald.

Hendon.—Offices and Workshops.—Plans by Charles A. Bollinger, F.R.I.B.A., 241, Finchley-rd., N.W.3, for offices, workshop and garages at Brenter. for James Shackell & Co., Ltd., have received town planning approval.

Hendon.—Flats.—B.C. Buildings and Town Planning Committee approved plans for erection of eight flats at junction of Victoria-rd. and Brent-st., N.W.4. Plans by Boro' Architect's Dept.

Mill Hill.—Rebuilding.—The Court of Governors of the Mill Hill School propose to rebuild rifle range at Mill Hill School, Mill Hill, N.W.7. Plans by Dalgliesh and Pullen, FF.R.I.B.A., 17, Fitzhardinge-st., Portman-sq., W.1, have received town planning approval.

Mitcham.—Additions to Hospital.—South-West Metropolitan Regional Hospital Board, 11, Portland-pl., W.1, propose to build X-ray department and chest clinic at Cumberland Hospital.

St. Pancras.—Appointment.—Franklin and Andrews, 25, Ludgate Hill, E.C.1, have been appointed quantity surveyors for the Plender-st. housing scheme by the Town Planning and Housing Development Committee. Committee also approved the appointment of Brian Colquhoun and Partners, 18, Upper Grosvenor-st., W.1, as consultant structural engineers for the Plender-st. housing scheme.

Southwark.—Factory.—Nurdin and Peacock, Ltd., 59, Wells-st., W.1, propose to build factory, etc., at Lavington-st. Plans by Harold W. Moore, F.R.I.B.A., 14-19, Gt. Chapel-st., Oxford-st., W.1.

Wembley.—Houses and Flats.—Housing and Town Planning Com. have approved plans by George MacLean and Partners, A.R.I.B.A., 34, The Mall, W.5, for development of Kenton Grange housing site to provide 29 aged persons' dwellings, six houses and 24 flats.

Wembley.—Flats.—B.C. Housing and Town Planning Committee have instructed Boro' Engineer and Surveyor to prepare and submit a scheme for block of flats, and proposed further accommodation at Keneric Lodge site.

Wembley.—Flats.—Housing and Town Planning Com. have approved proposals, submitted by Boro' Engineer and Surveyor, for erection of 72 flats at Church-la. and 18 at Harrow-rd.

"THE BUILDER" PRICES

ANTIMONY OXIDE

Prices as from November 12 of antimony oxide, Cookson's "O" quality, issued by Associated Lead Manufacturers, Ltd., are: Lots of 1 ton and over, £322 10s. per ton; lots of 1 cwt. and under, £329 10s. per ton.

Westminster.—Flats.—City Council to build ten-storey block of 60 flats at Churchill-gdns. Plans by Powell and Moya, AA.R.I.B.A., 36, Gt. Smith-st., S.W.1.

(PROVINCIAL)

Accrington.—Work to commence shortly on Stage 11 of extensions at Huncoat Power Station, for B.E.A.

Bakewell.—R.D.C. propose further 10 houses at Earl Sterndale.

Bangor.—University of North Wales propose new hall of residence at est. cost of £300,000 and further wing to quadrangle at estimated cost of £250,000.

Barrow-in-Furness.—Cruickshank & Seward, 16, Princes-st., Manchester 1, have prepared plans for first section of central college of further education at Howard-st.

Bathavon.—H. H. Goldsmith, 18, Gay-st., Bath, has prepared plans for 42 dwellings to be erected at Bathford, for R.D.C.

Birkenhead.—N.W. Industrial Estates, Liverpool, propose new factory at corner of Corporation-rd., Duke-st. and Cavendish-st. Architects are Ormrod & Banister, Liverpool.

Bowland.—R.D.C. propose further 10 houses at Waddington.

Bromsgrove.—U.D.C. approved erection of further 200 houses at Charford, for Bromsgrove Housing Association.

Caistor.—R.D.C. propse 54 houses at Bishop Norton, Claxby, Glentham, Grasby, South Kelsey, Limbet, Linwood, Lissington, Osgodby, Owersby, Middle Rasen, Searby-cum-Owmby, Snitterby and Stainton-le-Vale.

Chanctonbury.—R.D.C. to build 98 houses at Henfield, Pulborough and Steyning.

Cheshire.—E.C. 1952/3 schools programme includes secondary schools at Upton, Weaverham, Bebington, Shavington and Alsager. F. M. Parkes is County Architect, Chester.

Coventry.—British Industrial Ingot Metals, Ltd., Henry-st., propose new works at Rowleys Green-la. and R.C. authorities propose new school at Penny Park-la.

Darlington.—Boro' Architect, Central-bldgs., has prepared plans for children's home.

Darlington.—Hutton & Hutton, 24, Southend-ave., are the architects for proposed erection of 38 houses at Aycliffe, for R.D.C.

Durham.—T.C. has received sanction to borrow £41,435 for erection of Hartlepool West View Infants' sch., and £31,016 for Winlaton Residential Hostel.—County Architect, G. R. Clayton, has been asked to prepare plans for proposed health centre at Peterlee.

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Garstang.—R.D.C. propose erection of 95 houses at Inskip.

Hucknall.—M.O.E. approved sec. prim. sch. at Ruffs Farm, at estimated cost of £180,000.

Hull.—City Architect, Andrew Rankine, A.R.I.B.A., Guildhall, has prepared plans for first section of technical college at Queen's-gdns., at estimated cost of £270,000.

Inchicore.—C.I.E. are to modernise the body-building works at Spa-rd., under a £58,000 scheme.

Lancs.—E.C. approved plans and estimate of £41,732 for proposed Huyton-with-Roby Brookhouse St. Aidan's R.C. School, and £79,865 for Nelson College of Further Education (Phase 1).

Leeds.—Plans for children's home at Raynell-dr., Ireland Wood, have been prepared by City Architect, Priestley-hse., Quarry Hill.

Liverpool.—T.C. propose erection of three-storey block of flats at Hillside-ave.

Macclesfield.—T.C. propose three-storey flats at Weston estate.

Manchester.—T.C. approved revised scheme for adaptations at Oakwood Hall, Romiley.—E.C. propose six-form County Secondary School at Brookside-rd., Moston-la., Moston.

Manchester.—T.C. propose further 10 shops at Northern Moor Neighbourhood Unit, Wythenshawe, at estimated cost of £86,800.—T.C. to lease 15-acre site at Wythenshawe to M.O.S. for new factory, and approved plans for large extensions to works at Albion Foundry, Vickers-st., for Newtons Ironfounders, Ltd.

Northampton.—Extensions propsed at Northampton School for Girls, at est. cost of £17,000.

North Riding.—County Architect, Hubert Bennett, F.R.I.B.A., County Hall, Northallerton, has prepared plans for ambulance station at Malton.

Northumberland.—C.C. to spend £16,000 on reconstruction of Weetwood Bridge, and new workshops and plant depot are to be erected at Walbottle, at an estimated cost of £82,583.—County Standing Joint Committee to spend £12,375 on police houses at Walbottle, West Denton, Willington-sq. and Widdrington station.

Nottingham.—T.C. propose to build 10 shops with living accommodation at Clifton estate, at an estimated cost of £47,331.

Notts.—C.C. propose new police stations at Beeston, Bingham and Carlton in 1952 programme.

Penrith.—Cumberland C.C. propose Stage 1 of new sec. sch. in 1962 programme, est. cost, £79,000.

Peterborough.—T.C. to erect 50 houses at Mountsteven-ave. estate.

Redcar.—Boro' Engineer, R. Hilton, has prepared plans for 12 aged people's bungalows at Macleanave., Dormanstown, and Maple-sq.

Retford.—B.C. Housing Com. propose to acquire 60 acres at Ordsall, for erection of 500 houses at estimated cost of £500,000.

Salford.—T.C. has appointed Halliday & Agate, Manchester, architects, for the erection of the proposed Ordsall sec. mod. sch. at Smith-st. and Trafford-rd.

Sheffield.—Newton Chambers & Co., Ltd., Izal Works, Thorncliffe, Ecclesfield, propose large works extensions at est. cost of £85,000.

Staffs.—T. Swan & Co., Ltd., Love-la., Rugeley, Staffs, propose to build factory at Tewkesbury.

Stretford.—County Planning and Development com. have approved plans for reconstruction and extension to factory at Westinghouse-rd., for the British Oxygen Co., Ltd.

Stretford.—T.C. seek M.L.G. & P. consent to borrow £105,038 for erection of 34 houses and 56 flats at Christie-rd.

Sunderland.—M.H. has approved £28,000 scheme for women's hostel, and negotiations are proceeding regarding the erection of a £30,000 hostel for men. Boro' Architect is H. C. Bishop, Grange-hse., Stockton-rd., Sunderland.

West Hartlepool.—T.C. has applied for sanction to borrow £152,997 for erection of 116 Unity houses and £319,852 for 250 houses to be built by local master builders' association. Boro' Architect, A. G. Sinclair, has prepared layout plans for 422 houses at Owton Manor estate.

TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government Departments.*

Aberdeen.—Erection of the new Raden area special schools. J. A. O. Allan, Ross & Allan, FF.R.I.B.A., 10, Bon Accord-sq., Union-st., West End, Aberdeen. Excavation, brick, building and allied works: *The Stewart Estates (Aberdeen), Ltd., Bridge-of-Don, £52,102. Joinery, carpentry and allied works: *Clark & Donaldson, Ltd., £12,222. Asphalting and allied works: *William Briggs & Co., Ltd., Kittybrewster, £15,729. Plumber, sanitary engineering and allied work. *George N. Haden & Co., Ltd., Glasgow and Aberdeen, £19,523. Reinforced concrete and allied works, *William J. Anderson, Ltd., £12,062. Steel structural engineering and allied works, *George Basset & Sons, Ltd., £12,383. Steel windows and casements, *The Crittall Manufacturing Co., Ltd., Glasgow, £16,057. Heating engineering and allied works, *J. T. L. Parkinson, Ltd., £13,396. Electrical fittings, installation and allied works, *J. T. L. Parkinson, £14,489. All contracts from Aberdeen unless otherwise stated. Other contracts have been let.

Bakewell.—Six houses at Grindleford: *J. H. Cartledge, Baslow, £9,551; and four stone cottage flats at Hathersage: *H. Haywood, Sheffield, £5,211.

Barnard Castle.—38 houses on sites at Stainton, Cockfield, Woodland & Gainford, for R.D.C. Architect is J. Lawton, 45, Galgate, Barnard Castle: *R. C. Williamson, Ltd., Station Works, Rowlands Gill, Co. Durham.

Blackpool.—40 flats at Mereside estate, for B.C.: *S. A. Gregory (Builders), Ltd., Worthing, £49,803; and eight houses: *Simmons Bros., 71, Lancaster-rd., Marton, £12,191.

Brentford and Chiswick.—Nine flats at Oxford-rd., Chiswick:—

Cranebridge Estates, Ltd., 8a, Hounslow-rd., Whitton, Middx.	£18,640
Mudie Lee Builders, 320, Old Brompton-rd., S.W.5.	17,961
Cramb & Dean, Ltd., 61, Belsize-la., Hampstead, N.W.3	15,875
McManus, Ltd., 1,111, High-rd., Whetstone, N.20	15,280
Norman Sinclair, Ltd., 80/82, Uxbridge-rd., Ealing, W.13	14,750
C. Royal & Co., Ltd., 39, Wilton-rd., S.W.1	14,563
Co-Partner Building Operatives, Ltd., 1c, Station-rd., Sunbury-on-Thames	14,295
Williams & Pratt, Ltd., 6, Myrtle-ave., Eastcote, Ruislip	13,857
†C. Pitt & Son, Ltd., 1 & 2, The Studios, Blomfield-cres., W.2.	13,702

Camberwell.—12 houses at Danley-st. and Avondale-rise, Peckham, for B.S.: *Direct Labour.

Cemaes.—17 houses at St. Dogmaels, for R.D.C.: *D. A. Phillips.

Crook and Willington.—Six shops and flats at Low Mown Meadows, for U.D.C. Architects are Page, Son & Hill, 75, King-st., South Shields: *R. G. Finlay, Ltd., 28, West Sunniside, Sunderland.

Derby.—48 houses at Mackworth estate, for B.C.: *Direct Labour, £64,194; and 20 houses: *R. A. Wheeldon, Brailsford, Notts, £26,804.

Durham.—Alterations to Stanley fire station, for C.C. G. R. Clayton, County A., Court-la., Durham: *Thompson & Son, Ltd., Chester-le-Street, £6,211.

Durham.—Erection of administrative block for fire brigade headquarters at Framwellgate Moor, for C.C. County A., G. R. Clayton, Court-la., Durham:—

Middleton & Co. (Blackpool), Ltd., Darlington	£33,296
J. Huntley & Son, Ltd., Sunderland	30,811
Gradon & Son, Ltd., Durham	30,357
Wright & Kellett, Ltd., Chester-le-Street	28,685
*Thomas Armstrong, Ltd., Newcastle-on-Tyne	28,160

Durham.—Supply and erection of steelwork, for Neville's Cross Bridge, for C.C.: *Dorman Long & Co., Ltd., Middlesbrough, £45,698.

Easington.—16 houses at Thornley and 14 at Wingate, for R.D.C.: *G. McCall, Ltd., New Herrington, Co. Durham.

East Ham.—96 flats at Priory-rd.: *Thomas Bates & Son, Ltd., Harold Wood, Romford.

Felling-on-Tyne.—156 houses for U.D.C.: *Direct Labour.

Glasgow. — Plans prepared for new school at Stornway-pl., Milton, site No. 3. John MacNab, F.R.I.B.A., architect, 129, Bath-st., Blythswood, Glasgow, W.C.2. *Thomas Henderson & Sons (Glasgow), Ltd., Contractors, Glasgow.

Hebburn-on-Tyne.—76 houses at Hartleyburn estate extension, for U.D.C.: *W. Leech, Ltd., Clayton-st., Newcastle-on-Tyne.

Ilford.—Erection of 22 old people's flats at The Glade, Claybury estate, Ilford, for B.C.:—

F. Troy & Co., Ltd., 131, Great Suffolk-st., London, S.E.1	£36,799
Parrish (Builders), Ltd., Billet-la., Hornchurch, Essex	33,937
E. H. Smith (Croydon), Ltd., Wellesley-rd., Croydon, Surrey	32,624
Florey & Sons (Builders), Ltd., 70, Balfour-rd., Ilford, Essex	32,089
William J. Jerram, Ltd., Sandford Works, Sandford-rd., East Ham	31,814
Gratton & Wilson, 13, Frederick-st., Stratford, E.15	29,367
Hammond & Miles, Ltd., Scrafton-rd. Works, Ilford-la., Ilford	28,747
Frank M. Miles, Ltd., Manor-rd., Grange Hill, Chigwell, Essex	28,562
Daniel T. Jackson, Ltd., Roding Hill Works, Roding-la. North, Woodford Bridge	28,365
*John Holland & Bros. (Seven Kings), Ltd., Ltd., 51, Water-la., Seven Kings, Ilford	28,103

Borough Surveyor's estimate, £28,040.

Jarrow-on-Tyne.—Repairs and renewals to factory at Tyne-st., for Jarrow Metal Industries, Ltd.: *Bewley & Scott, Ltd., Dunston-on-Tyne, £9,762.

Knockholt.—Construction of new service reservoir for Metropolitan Water Board: *J. B. Edwards & Co. (Whyteleafe), Ltd., £92,361.

Leyland.—Large extensions for Leyland Motor Co., Ltd.: *A. Monk & Co., Ltd., Padgate, Warrington.

Liverpool.—New factory (Phase 1) at Woodend-ave., Speke, for Faulkner Bros.: *H. Lucas & Son, 63, Tithebarn-st., Liverpool.

L.C.C.—Contracts exceeding £2,500 in value placed by L.C.C. during period September-October, 1951:—

Erection of Monmouth-rd. sch., Yeomans & Partners, Ltd.; erection of Crown-la. hutted sch., H. T. Oliver & Sons, Ltd.; construction of foundations and superstructure of Stage II of Greenacres cty. prim. sch., Bunting Construction Co., Ltd.; construction of several blocks of flats, etc., on the Putney Park-la. site, Wandsworth, Kent & Sussex Contractors, Ltd.; construction of the superstructure of four blocks of flats, etc., at Meredian estate extension, Greenwich, A. Roberts & Co., Ltd.; construction of shops, maisonettes, garages and other work at Becontree (Heath Park extension), Essex, S. R. Bryett, Esq.; construction of four blocks of flats, maisonettes and other work on the Mortimer-cres. site, Hampstead, Halse & Sons, Ltd.; construction of one block of flats and other work at Solander-gdns., Stepney, Thomas & Edge, Ltd.

Construction of several blocks of flats and other work, etc., at Argyle estate, M. J. Gleeson (Contractors), Ltd.; construction of several blocks of flats and other work on the Clarence-av. site, Wandsworth, Percy Bilton, Ltd.; construction of four blocks of flats and other work at Springfield estate, Wandsworth, Kent & Sussex Contractors, Ltd.; repair of war damage at Brockwell Park Lido, Grace & Marsh, Ltd.; repair of war damage at Athelney-st. school, Bellingham, Flowitt & Co., Ltd.; repair of war damage and carrying out of improvements at the London Nautical School, S.E.1, J. A. Tyler & Sons, Ltd.; construction and maintenance of 100 eight-person electric passenger lifts at the Council's estates, Express Lift Co., Ltd.

Boundary fencing and screens at Coldharbour playing fields, Peerless Fence & Products, Ltd.; electrical installation at Winton cty. prim. sch., N.1, Buchanan & Curwen, Ltd.; electrical installation at Holmes-rd. sch., Buchanan & Curwen, Ltd.; electrical installation at Mansford-st. cty. sec. sch., E.2, H. M. Horton, Ltd.; reinstatement of fencing at several cottage estate, Chestnut Products, Ltd.; reinstatement of the former shelter site at Eel Brook Common, Grassphalte, Ltd.; reinstatement of the former shelter and balloon barrage sites, etc., at King Edward Memorial Park and Victoria Park, E. Doe & Son, Ltd.

¶London (Admiralty).—Particulars of contracts placed by Civil Engineer-in-Chief's Dept., Admiralty:—

Portsmouth: Erection of hutting, etc., Warings (Contractors), Ltd., London-rd., Hilsea, Portsmouth; and erection of laboratory, F. J. Privett, Ltd., Privett-hse., Copnor-rd., Portsmouth. *St. Merryn*: Construction of mess block, T. E. Davey & Son, 20, Fernleigh-rd., Wadebridge, Cornwall. *Baverstock*: Re-roofing hangar, D. T. Edwards & Co., Ltd., 19, Ashley-pl., Westminster, London, S.W.1. *Coventry*: Structural steelwork, The Burton Constructional Engineering Co., Ltd., Wetmore-rd., Burton-on-Trent. *Chatham*: Erection of workshop, Carter-Horsley (Engineers), Ltd., Merebank-rd., Waddon, Surrey.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended November 3:—

Civil engineering: Henry Boot & Sons, Ltd., Sheffield. *Building work*: Y. J. Lovell & Son, Ltd., Gerrards Cross, Bucks; John McLean & Sons, Ltd., Wolverhampton; Selleck Nicholls & Co., Ltd. St. Austell, Cornwall. *Painting work*: G. & J. Seddon, Ltd., Little Hulton, nr. Bolton, Lancs. *Installation of ventilating plant*: Air Control Installations, Ltd., Ruislip, Middlesex.

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Installation of heating plant: Brightside Foundry & Eng. Co., Ltd., Birmingham. *Resheeting of hangars*: Farrans, Ltd., Dunmurry, Belfast. *Treatment of steel sheeting to hangars*: S. Courtney, Ltd., c/o Guy Morrison & Co., Ltd., London, S.W.1. *Hangar doors (sub-contract)*: Head Wrightson Aluminium, Ltd., Thornaby-on-Tees. *General maintenance work*: Walter Lawrence & Son, Ltd., Swaffham, Norfolk; Lewis & Walters, Ltd., Leamington Spa.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended November 10.

Building and hutting work: Neodox, Ltd., Manchester; Flush Woodwork, Ltd., London, E.6. *Civil engineering*: Gee, Walker and Slater, Ltd., London, W.1. *Heating and hot water installation services*: R. Crittall & Co., Ltd., London, W.1; Benham & Sons, Ltd., London, W.1.

Painting work: Allen McDermott, Bradford; Alfred Bagnall & Sons, Ltd., Shipley, Yorks. *General maintenance work*: Dudley Coles, Plymouth; Devon Contractors, Ltd., Exeter.

¶London (M.O.W.).—Contracts placed by M.O.W. for week ended November 3:—

London: Royal Hospital, Chelsea, Alterations and additions, Wm. Willett, Ltd., Sloane-sq., W.1. *Berkshire*: Streatley, Erection of telephone repeater station, Boshers (Cholsey), Reading-rd., Cholsey. *Durham*: Durham, Erection of telephone exchange, John Jackson & Sons, 72, Corporation-st., Newcastle-on-Tyne. *Essex*: Min. of Food Slaughterhouse, Sheepen-rd., Colchester, Alterations and extensions, Hutton (Builders), Ltd., Birch, Colchester. *Inverness-shire*: Mallaig, Erection of temporary school building and dining-room, Gordon & Brown, Mallaig.

Lancashire: R.O.F., Stopes Brow, Blackburn, Tool room extension, J. Turner & Sons (Preston), Ltd., William Henry-st., Preston. *Nottinghamshire*: M/F Storage Programme, Gamston Airfield, Adaptations for egg-box storage, H. Rouse & Son, Mansfield Woodhouse. *Staffordshire*: Miners' Hostel, Audley-st., Knutton, Newcastle-under-Lyme, Interior and exterior decoration, G. & J. Seddon, Ltd., 55, Duke-st., Fenton, Stoke-on-Trent. *Yorkshire*: Min. of Food Storage Building, Carcroft-bldg., Carcroft, Erection of single storage building, Jacques & Greeves, Ltd., 3, Cedar-rd., Balby, Doncaster; and Newby Wiske Hall, nr. Northallerton, Alterations and extensions to police training college, Thos. Clements & Son, Ltd., Dene Joinery Works, Selbourne-gdns., Newcastle.

¶London (War Dept.).—Works contracts placed by W.D. during week ended November 3:—

Northants: Painting, W. J. Wood Bldg. Renovators, Ltd., Manchester. *Yorkshire*: Painting, W. T. Pickering & Sons, Ltd., Watford; Painting, T. Metcalfe & Sons, Ltd., Darlington. *Nottinghamshire*: Roadwork, Constable Hart & Co., Ltd., Derby; Building work, A. H. Taylor (Nottm.), Ltd., Attenborough. *Berkshire*: Roofing, H. V. Smith & Co., Ltd., London, S.W.1. *Cheshire*: Roadwork, General Asphalte Co., Ltd., London, S.W.1.

Anglesey: Building work, G. W. Beretta (Anglesey), Ltd., Rosneigr. *Merioneth*: Painting, F. Labbett & Sons, Nottingham. *Renfrewshire*: Roof repairs, Robert G. Scott & Co., Glasgow. *Hampshire*: Painting, Arnold Sharrocks, Ltd., Ash; Miscellaneous, Liddelow, Ltd., Wembley. *Surrey*: Building work, Chas. C. Cull, Christmas Pie, nr. Guildford.

Manchester.—New factory at Wythenshawe estate, for Ferranti, Ltd.: *Richard Costain, Ltd.

Manchester.—Works for T.C.:—Erection of Crabla. prim. sch.: *G. & J. Seddon, Ltd., Little Hulton, nr. Bolton; 10 houses at Northern Moor: *F. Gannon & Sons, Ltd., Manchester; 24 flats: *Simms, Son & Cooke, Ltd., Nottingham (also 12 flats); 78 flats: *G. Wimpey & Co., Ltd., London; houses at Newall Green: *J. C. Darley, Ltd., Manchester (17); *H. Jones, Stockport (9); 30 flats: *G. Wimpey & Co., Ltd., London; houses at Woodhouse Park: *H. Jones, Stockport (6); and 84 flats: *G. Wimpey & Co., Ltd., London.

Meath.—49 cottages at Killeen, Ratoath and Dunboyne, for C.C.: *J. Halligan, Burren, Dunleer, £49,000.

Northallerton.—24 houses at Boroughbridge-rd., for R.D.C.: *Walter Thompson, Northallerton, £35,636.

Northampton.—76 aged persons' bungalows at King's Heath, for T.C.: *Direct Labour, £71,636.

Norton.—Six houses, Settrington, for R.D.C. Architect is R. W. Clayton, A.R.I.B.A.:—

C. R. Coates, Ltd., Scarborough	£10,267
F. & H. Calam, Rillington, Malton	9,887
R. Hudson (Town & Country Builder), Norton, Malton	9,502
*H. Midgley & Son, Cayton Bay, Scarborough	8,957

Sale.—Erection of ambulance depot: *Sparke & Stevens, Ltd., 105, Wood-la., Timperley, £10,344.

Scottish Special Housing Association, Ltd.—Contracts placed between September 26 to October 24:—

Site Servicing.

Harthill, Lanarkshire (96 Trad.): Hay & Anderson, 33, Innerwood-rd., Kilwinning, fencing; and Paris-ave., Denny (100 Miller): James Strang & Son, Polmont, fencing.

House Erection.

Gorebridge, Midlothian (20 Trad.): N. Thomson, Croft-st., Dalkeith, excavator, mason and brick; Patrick Knox & Son, Ltd., 31, Crighton-la., Edinburgh, plumber; Peter Nimmo & Sons, Ltd., Fountainhall Works, Glasgow-rd., Edinburgh, carpenter and joiner; N. Thomson, Croft-st. Dalkeith plaster; Middleton & Son, 22a, Dublin-st., Edinburgh,

painter; Cunningham, Dickson & Walker, Ltd., 3, Frederick-st., Edinburgh, glazier; Boyne Smith & Wylie, 22, Nelson-st., Edinburgh, electrical. Penicuik, Midlothian (90 Miller): James Miller & Partners, Ltd., 18/20, George-st., Edinburgh, all trades. Plean, Stirlingshire (41 Weir and Trad.): Geddes & Springthorpe, 41, Constitution-st., Leith, resetting of steps. Cairn Edward, New Galloway (19 Trad.): Wm Waugh & Sons, Broadford, Auldgirth, slater and roughcast. Cadder-rd., Glasgow (46 Trad.): John Robertson & Co., 147, Bath-st., Glasgow, C.2, electrical. Mayfield, Saltcoats (100 Cruden): S.W. Scotland Electricity Board, Kilmarnock, electrical. Glenbrittle, Skye (eight Timber): Price MacInnes, Broadford, Skye, water supply. Glenelg, Inverness-shire (seven Timber): Ratagan, Ross & Cromarty (eight Timber): Inverinate, Ross and Cromarty (seven Timber): Price McInnes, Broadford, Skye, water supply. Wyndford, Brosburn (108 Miller): James Miller & Partners, Ltd., 18/20, George-st., Edinburgh, all trades. Northfield, Aberdeen (126 Weir & 74 Cruden): A. M. Tweedie & Co., Ltd., 44/52, Bilbao-st., Glasgow, fencing. Cean-na-Croo, Inverness-shire (six Timber): The Central Electric Co., Ltd., 139, Bruntsfield-pl., Edinburgh, electrical. Dysart, Kirkcaldy (54 Weir): Northern Sports Ground Construction Co., George-st., Edinburgh, fencing. Toryglen, Glasgow (eight Low-Cost): S.W. Scotland Electricity Board, 137, Almada-st., Hamilton, electrical. New Dailly, Ayrshire (90 Trad.): S.W. Scotland Electricity Board, Greenholme-st., Kilmarnock, electrical. Crosshill & Meadows, Campbeltown (52 Weir); Calton, Campbeltown (100 Cruden): North of Scotland Hydro Electric Board, 16, Rothesay-ter., Edinburgh, electrical. Calton, Campbeltown (100 Cruden): Scottish Gas Board, Campbeltown, gas services. Poplar-ave., Bishopton (six Trad.): R. C. Whyte & Co., Ltd., 95, Bath-st., Glasgow, roof tiler and roughcast. Bellsmyre, Dumbarton (150 B.I.S.F.): A. M. Tweedie & Co., Ltd., 44/52, Bilbao-st., Glasgow, fencing. Clackmannan (12 Brick): J. & J. Cousins, Zetland Villa, Clackmannan, removal of parapet.

Maintenance.

Townhead, Coatbridge (50 B.I.S.F.): Direct Labour Organisation, joinery repairs. Sandyflats, Johnston (66 Trad.): E. Forsyth, 1, Marjory-dr., Paisley, painting, fencing.

Southport.—50 houses at Heathfield-rd. site, for B.C.: *S. Rostron & Sons, Southport, £70,498.

South Shields.—62 houses at Simonside estate, for T.C.: *L. W. Evans (Contractors), Ltd., Norfolk-st., Sunderland, £74,563.

Stoke-on-Trent.—20 houses and reconstruction at University College of North Staffordshire, for T.C.: *Direct Labour.

Surrey.—Conversion of Forbes House, Ham-st., st. Ham Common, into home for aged persons, for C.C.: *Bailey's Builders & Contractors, Ltd., 2, George-rd., New Malden, Surrey.

Tarvin.—Six houses at Kelsall, for R.D.C.: *T. Nixon & Son, £7,650; and four at Brook-ave., Tattenhall: *J. Wright & Son, Huxley, £5,100.

Tipton.—Block of flats at Denbigh estate, for B.C.: *H. & R. L. James, Holyhead-hse., Holyhead-rd., Wednesbury.

Wallsend.—Erection of ambulance depot at Oakgrove, Wallsend, for Northumberland C.C. County Architect is C. C. Brown, County Hall, Newcastle: *Wilkinson & Topping, Ltd., Gateshead, £6,761.

West Bromwich.—36 flats at Tenscore-st., for B.C.: *Gee, Walker & Slater, Ltd., Uttoxeter Old-rd., Derby, £39,085.

Whitley Bay.—Eight houses at Foxhunters estate, for U.D.C.: *J. W. Urpeth, Bedlington.

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